

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

15 NOV 1943

Received at London Office.

Date of writing Report... 10 NOV 1943 When handed in at Local Office... 10 NOV 1943 Port of NEWCASTLE-ON-TYNE.No. in Survey held at HEBBURN-ON-TYNE Date, First Survey 27-8-42 Last Survey 23-9-1943  
Reg. Book. (Number of Visits... 19)on the M. V. "RIPPINGHAM GRANGE" Tons { Gross 10365  
Net 6329Built at HEBBURN-ON-TYNE By whom built HAWTHORN LESLIE & CO. Yard No. 653 When built 1943Owners HOULDER LINE LTD. Port belonging to LONDON.Electrical Installation fitted by HAWTHORN LESLIE & CO. Contract No. 653 When fitted 1943Is vessel fitted for carrying Petroleum in bulk — Is vessel equipped with D.F. YES E.S.D. — Gy.C. YES Sub.Sig. —Have plans been submitted and approved YES System of Distribution TWO WIRE Voltage of supply for Lighting 220Heating 220 Power 220 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 atrip 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 theyarranged to run in parallel YES, are shunt field regulators provided YES Is the compound winding connected to the negative or positive poleNEGATIVE Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing YES Have certificates oftest for machines under 100 kw. been supplied YES and the results found as per rule YES Are the lubricating arrangements and the constructionof the generators as per rule YES Position of Generators ENGINE ROOM—, is the ventilation in way of generators satisfactory YES are they clear of inflammable material YES, if situatednear unprotected combustible material state distance from same horizontally — and vertically —, are the generators protected from mechanicalinjury and damage from water, steam and oil YES, are the bedplates and frames earthed YES and the prime movers and generators in metalliccontact YES Switchboards, where are main switchboards placed ENGINE ROOM AFT ON GALLERYare they in accessible positions, free from inflammable gases and acid fumes YES, are they protected from mechanical injury and damage from water, steamand oil YES, if situated near unprotected combustible material state distance from same horizontally — and vertically —, what insulationmaterial is used for the panels SINDANYO, if of synthetic insulating material is it an Approved Type YES, if ofsemi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule — Is the frame effectually earthed YESIs the construction as per Rule YES, including accessibility of parts YES, absence of fuses on the back of the board YES, individual fusesto 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 1400 T.P. CIRCUITBREAKERS, 2 OVERLOADS 1400/2800 TIME LAG 10 SECONDS NO VOLT AND REVERSE CURRENT TRIPSMAGNETIC BLOW OUTSand for each outgoing circuit DOUBLE POLE QUICK BREAK SWITCHES AND DOUBLE POLE H.R.C. FUSES. FOR COMPRESSORS450 A. CONTACTOR PANEL FOR SUB-BOARDS, D.P. CIRCUIT BREAKERS WITH 0% AND TIME LAG.Are compartments containing switchboards composed of fire-resisting material or lined as per Rule YES Instruments on main switchboard 4ammeters 4 voltmeters — synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to theequaliser connection YES Earth Testing, state means provided EARTH LAMPS CONNECTED TO E THROUGH SWITCHES AND FUSESSwitches, Circuit Breakers and Fuses, are they as per Rule YES, are the fuses an approved type YES, are all fuses labelled asper Rule YES If circuit breakers are provided for the generators, at what overload current did they open when tested 40%, are the reversed currentprotection devices connected on the pole opposite to the equaliser connection YES, have they been tested under working conditions, and at what currentdid they operate 10% Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule YESCables, 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 <4.4V, are the ends of all cables having a sectional area of 0.84square inch and above provided with soldering sockets YES Are paper insulated and varnished cambric insulated cables sealed at the ends YES



with insulating compound. YES <sup>AND</sup> 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. NO, 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. CLIPPED TO PERFORATED TRAY PLATES. LEAD COVERED CABLES CLIPPED TO WOOD  
FOUND IN ACCOMMODATION.

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 effectively 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. —. Searchlight Lamps, No. of. —, whether fixed or portable. —

, are their fittings as per Rule. —. Heating ~~and Cooking~~, is the general construction as per Rule. YES.

are the frames effectually earthed. YES, are heaters in the accommodation of the convection type. YES. 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. 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 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.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	4	300	220	1364	450	DIESEL		ABOVE 150°
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 ...	4 X 300	3	61.093	1364	1392	324/540	V.C.	L.C.B.
" " EQUALISER ...		2	61.093				V.C.	L.C.B.
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 ...							
SUB SWITCHBOARD No.1.		34/103	225	385	840	V.C.	L.C.A+B.
" No.5.		34/103	223	386	345	V.C.	L.C.A+B.
" No.3.		34/103	314	385	390	V.C.	L.C.A+B.
OZONAIR PLANT SECTION BOX No.1.	1	7/064	28	46	160	V.I.R.	L.C.A+B.
OIL PURIFIER " " No.2	1	7/064	17.5	46	126	V.I.R.	L.C.A+B.
" " " No.3	1	7/064	24	46	69	V.I.R.	L.C.A+B.
ENGINE ROOM LIGHTING " " No.4	1	19/052	44	104	90	V.C.	L.C.A+B.
OFFICERS' EAGERS " " "E"	1	19/052	60	104	210	V.C.	L.C.A+B.
PASSENGER ACCOMM. " " "H"	1	19/044	23	84	195	V.C.	L.C.A+B.
CREWS " " "J"	1	7/064	24	46	270	V.I.R.	L.C.A+B.
AFT HOLD " " "K"	1	7/052	9	34	344	V.I.R.	L.C.A+B.
FORD " " "L"	1	7/064	14	46	480	V.I.R.	L.C.A+B.
THERMOTANK FAN MOTORS + PADS. "N"	1	19/052	57	104	210	V.C.	L.C.A+B.

#### LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	7/064	21	46	330	V.I.R.	L.C.A+B.
NAVIGATION LIGHTS ...	1	7/052	19	34	390	V.I.R.	L.C.A+B.
LIGHTING AND HEATING ...	ALTERNATE SUPPLY FROM ENGINEERS ACCOMMODATION DISTRIBUTION BOARD.						
ENGINE ROOM LIGHTING DIS. BOARD D1	1	7/044	11	31	120	V.I.R.	L.C.A+B.
" " " D2	1	7/044	11	31	165	V.I.R.	"
" " " D3	1	7/044	11	31	150	V.I.R.	"
" " " D4	1	7/044	11	31	180	V.I.R.	"
* CREW ACCOMM. LIGHTING DIS. FUSE BOARD J1	1	7/044	8	31	30	V.I.R.	L.C.A+B.
" " " J2	1	7/036	6	24	120	V.I.R.	"
AFT HOLD " " K1	1	7/029	4	15	15	V.I.R.	"
" " " K2	1	7/029	4	15	15	V.I.R.	"
" " " K3	1	7/029	4	15	90	V.I.R.	"
FORD HOLD " " L1	1	7/036	5	24	225	V.I.R.	"
" " " L2	1	7/036	5	24	225	V.I.R.	"
" " " L3	1	7/036	5.5	24	15	V.I.R.	"
" " " L4	1	7/036	5.5	24	15	V.I.R.	"

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.	SUPPLY FROM No.3 SUB-SWITCHBOARD.			
BRINE PUMP MOTOR	1	8	1	19/044	34	84	90 V.C. L.C.A+B.
FAN MOTORS	4	3	1	7/029	12	15	42/134 V.I.R. L.C.A+B.
"	4	2 1/4	1	7/029	9.4	15	180 " "
"	1	2	1	7/029	9	15	104 " "
"	12	1 3/8	1	7/029	4.5	15	138/172 " "
CABLES INSTALLED FOR	1	3	1	7/029			164 " "
"	2	2 1/4	1	7/029			190 " "
"	7	2	1	7/029			120/182 " "
				SUPPLY FROM No.1 SUB-SWITCHBOARD.			
DEGAUSSING MOTOR/GENERATOR	1		1	7/064	31	46	200 V.I.R. L.C.A+B.
FAN MOTORS	3	3	1	7/029	12	15	108/54 " "
"	3	2	1	7/029	9	15	24/116 " "
"	4	1 3/8	1	7/029	4.5	15	164/172 " "
"	8	1 1/2	1	7/029	6	15	122/164 " "
CABLES INSTALLED FOR	1	2 1/4	1	7/029			140 " "
"	2	2	1	7/029			100 " "
"	3	1 3/8	1	7/029			112/148 " "
				SUPPLY FROM No.5 SUB-SWITCHBOARD.			
BRINE PUMP	1	8	1	19/044	34	84	90 V.C. L.C.A+B.
FAN MOTORS	3	3	1	7/029	12	15	84/128 V.I.R. " "
"	2	2 1/4	1	7/029	9.4	15	118 " "
"	4	2	1	7/029	9	15	46/92 " "
"	4	1 3/8	1	7/029	4.5	15	104/110 " "
"	3	1 1/4	1	7/029	6	15	120/160 " "
CABLES INSTALLED FOR	2	3	1	7/029			90 " "
"	1	2 1/4	1	7/029			100 " "
"	1	2	1	7/029			78 " "
"	1	1 3/8	1	7/029			92 " "



### MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULA- TED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	IN THE CIRCUIT.				
			In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...							
SUB SWITCH BOARD No. 1.		37/103	225	385 ✓	840	V.C.	L.C.A. + B.
" No. 5		37/103	223	386 ✓	345	V.C.	L.C.A. + B.
" No. 3.		37/103	314	385 ✓	390	V.C.	L.C.A. + B.
OZONAIR PLANT SECTION BOX No. 1.	1	7/064	28	46 ✓	160	V.I.R.	L.C.A. + B.
OIL PURIFIER " " No. 2	1	7/064	17.5	46 ✓	126	V.I.R.	L.C.A. + B.
" " No. 3	1	7/064	24	46 ✓	69	V.I.R.	L.C.A. + B.
ENGINE ROOM LIGHTING " " No. 4	1	19/052	44	104 ✓	90	V.C.	L.C.A. + B.
OFFICERS' ENGINES " " "E"	1	19/052	80	104 ✓	210	V.C.	L.C.A. + B.
PASSENGER ACCOMM. " " "H"	1	19/044	23	84 ✓	195	V.C.	L.C.A. + B.
CREWS " " "J"	1	7/064	24	46 ✓	270	V.I.R.	L.C.A. + B.
AFT HOLD " " "K"	1	7/052	9	37 ✓	374	V.I.R.	L.C.A. + B.
FORD " " "L"	1	7/064	12	46 ✓	480	V.I.R.	L.C.A. + B.
THERMOTANK FAN MOTORS + PADS. "N"	1	19/052	57	104 ✓	210	V.C.	L.C.A. + B.

LIGHTING AND HEATING, ETC., CABLES.

				1	Y/.064	21	46	330	V.I.R.	LCA+B.
WIRELESS				1	Y/.052	19	34	390	V.I.R.	LCA+B.
NAVIGATION LIGHTS				ALTERNATE SUPPLY FROM ENGINEERS ACCOMMODATION DISTRIBUTION BOARD						
ENGINE ROOM LIGHTING DIS BOARD D1				1	Y/.044	11	31	120	V.I.R.	LCA+B.
" " " D2				1	Y/.044	11	31	165	V.I.R.	"
" " " D3				1	Y/.044	11	31	150	V.I.R.	"
" " " D4				1	Y/.044	11	31	180	V.I.R.	"
OFFICERS ACCOM. " " E1				1	Y/.052	4	15	180	V.I.R.	"
" " " E2				1	Y/.044	4	31	330	V.I.R.	LCA+B.
" " " E3				1	Y/.044	6	31	360	V.I.R.	"
" " " E4				1	Y/.044	20	31	60	V.I.R.	"
" " " E5				1	Y/.044	8	31	210	V.I.R.	"
" " " E6				1	Y/.044	10	31	150	V.I.R.	"
PERFIC. ROOM " " G.				1	Y/.052	10	34	240	V.I.R.	LCA+B.
ENGINEER ACCOMM " " H1				1	Y/.044	11	31	90	V.I.R.	"
" " " H2				1	Y/.044	11	31	15	V.I.R.	"
OFFICERS' ACCOM. " " E7				1	Y/.064	18	46	450	V.I.R.	LCA+B.

## MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.	SUPPLY FROM MAIN SWITCHBOARD.						
COMPRESSOR No 1.		1	185	2	3Y/103	690	440 ✓	450	V.C.	L.C.B.
" No. 2.		1	185	2	3Y/103	690	440 ✓	460	V.C.	L.C.B.
" No. 3.		1	185	2	3Y/103	690	440	290	V.C.	L.C.B.
BRINE PUMP	No 1	1	3.5	1	7/052	15.5	34 ✓	300	V.I.R.	L.C.A. & B.
"	No 2.	1	16	1	19/052	63	104 ✓	186	V.C.	"
"	No 3	1	16	1	19/052	63	104 ✓	180	"	"
"	No 4	1	16	1	19/052	63	104 ✓	160	"	"
"	No 5	1	16	1	19/052	63	104 ✓	156	"	"
"	No 6	1	16	1	19/052	63	104 ✓	150	"	"
CIRCULATING WATER PUMP	No 1	1	24	1	19/064	96	135 ✓	372	"	"
"	No 2	1	24	1	19/064	96	135 ✓	370	"	"
COOLING PUMP	No 1	1	42	1	19/083	158	191 ✓	348	"	"
"	No 2	1	42	1	19/083	158	191 ✓	300	"	"
"	No 3	1	42	1	19/083	158	191 ✓	246	"	"
" (SALT)	No 1	1	31	1	19/064	118	135 ✓	300	"	"
	No 2	1	31	1	19/064	118	135 ✓	320	"	"
	No 3	1	31	1	19/064	118	135 ✓	260	"	"
LUBRICATING OIL PUMP	No 1	1	12	1	19/044	48	84 ✓	334	"	"
	No 2	1	12	1	19/044	48	84 ✓	400	"	"
	No 3	1	12	1	19/044	48	84 ✓	390	"	"
OIL FUEL TRANSFER PUMP	No 1	1	5	1	4/044	21	31 ✓	180	V.I.R.	"
	No 2	1	5	1	4/044	21	31 ✓	183	"	"
TURNING MOTOR PORT.	No 1	1	4.5	1	19/052	31	104 ✓	200	V.C.	"
" STBD	No 2	1	4.5	1	19/052	31	104 ✓	246	"	"
WORKSHOP MOTOR		1	4.5	1	19/044	30	84 ✓	198	"	"
DEGAUSSING MOTOR GENERATOR		1	4.2 KW	1	4/064	33	46 ✓	160	V.I.R.	"
"	"	1	16 KW	1	19/052	44	104 ✓	192	V.C.	"
OZON AIR PLANT.	"	2	3 KW	1	4/044	13.5	31 ✓	60/60	V.I.R.	"



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 R. & W. HAWTHORN, LESLIE & CO. LIMITED.

*C. Stephenson*

Electrical Engineers.

Date 25/10/43

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass 30 Feet.

Minimum distance between electric generators or motors and steering compass 22 Feet.

The nearest cables to the compasses are as follows:—

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

A cable carrying 14 Ampères INSIDE feet from standard compass feet from 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 R. & W. HAWTHORN, LESLIE & CO. LIMITED.

*C. Stephenson*

Builder's Signature.

Date 25/10/43

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 28-12-42.

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 was installed under special survey, to comply with the Society's Rules, and in accordance with the approved plans.

Materials used are of good quality and the workmanship is satisfactory

On completion the insulation resistance was good and the generators operated, with satisfactory results, under normal working conditions.

The equipment, as installed, is, in my opinion, suitable for a Classed Vessel.

*Noted*  
*LC*

18/11/43.

Total Capacity of Generators 1200 Kilowatts.

When applied for,  
The amount of Fee ... 45: — : 12 Oct 1943  
When received. 19 Oct 1943  
Travelling Expenses (if any) £ : : 19 Oct 1943

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

Committee's Minute

TUES. 30 NOV 1943

Assigned

*see minute no*  
*78 Rpt.*