

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 19. When handed in at Local Office 6/4/1950 Port of BELFAST
 Received at London Office 13 APR 1950
 No. in Survey held at BELFAST Date, First Survey 17 May 1949 Last Survey 24 March 1950
 Reg. Book. 40528 (No. of Visits 31)
 on the T.S.S. "RUSIC"
 SUP. BELFAST By whom built MESSRS. HARLAND & WOLFF LTD. Yard No. 1414 Tons Gross 13589 Net 7788
 Built at BELFAST When built 1950.
 Owners SHAW SAVILL & ALBION CO. LTD. Port belonging to SOUTHAMPTON
 Installation fitted by MESSRS. HARLAND & WOLFF LTD. When fitted 1950.
 Is vessel equipped for carrying Petroleum in bulk No. Is vessel equipped with D.F. YES. E.S.D. YES. Gy.C. YES. Sub.Sig. No. Radar. YES.

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 Yes. 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 In Engine Room
 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 Near Generation

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 Sindamyo, 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 T.P. Circuit Breaker with O.L. And R.C. Trips.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit T.P. Circuit Breaker or T.P. Switch and Fuses

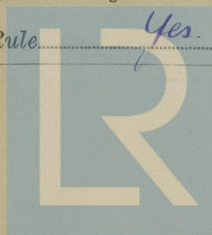
Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 4
 ammeters 2 voltmeters — synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection. Yes Earth Testing, state means provided Earth lamps.

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes, make of fuses Artic, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 50%, and at what current do the reversed current protective devices operate 250 & 1900

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 6.1 volts, 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 Yes, if so, are they adequately protected Yes Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit — or of the "HR" type Yes State how the cables are supported or protected V.C.C. or HR. shipped.

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



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes. Emergency Supply, state position yes.

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 yes.

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

Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present yes.

if so, how are they protected yes.

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

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

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 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 yes. 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 yes. 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 yes.

E.S.D., if fitted state maker Marconi 860 location of transmitter South bottom Ford and receiver Chart Room.

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 ...	2	B.T.H.	500.	220	2270	1000	Steam Turbine	B.T.H.
	2	H.H. Allen	400.	220	1820	333	I.C.E.	H.H. Allen
EMERGENCY ...								
ROTARY TRANSFORMER								

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 ...	500	B. Bar.	2 1/4"	2270	2270	50	—	Steel.
" " EQUALISER ...	—	B. Bar.	1 1/2"	—	1500	25	—	—
main generator Equ. aliser	400	3	9/103	1820	2214	60	V.C.	L.C.
" " Equ. aliser	—	2	9/103	—	476	30	#	—
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR...								

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

DESCRIPTION.								
Board 'A'	Heating	1	37/072	196	246	135	VC.	LC.
'A'	Ventilation	1	19/064	100	135	135	"	"
'B'	booking	1	6/093	374	464	480	"	"
'C' & 'D'	Winches	1	9/103	545	738	710	"	"
'E'	Heating	1	37/083	232	296	510	"	"
'E'	Winches	1	6/093	444	464	510	"	"
'F' & 'G'	Winches	1	6/093	444	464	360	"	"
'H'	Winches	1	37/103	255	385	420	"	"
'I'	Ref. rig.	2	6/103	900	1080	240	"	"
'A'	lighting	1	19/064	85	135	135	"	"
'A'	Winches	1	19/044	51	87	135	"	"
'E'	lighting	1	19/083	103	191	510	"	"

DESCRIPTION.

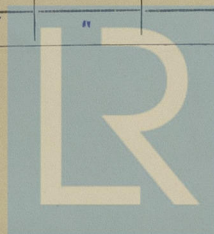
	CONDUCTORS		MAX. CURRENT	APPROX. LENGTH (lead plus return)	INSULATION	PROTECTIVE COVERING.
	No. IN PARALLEL PER POLE	SECT. area or No. & dia. of Strands. Sq. in. or sq. mm.	IN CIRCUIT			
Dist. Box No. 25 (General hq.)	1	7/044	6.9	31	90	Rubber HR.
do. No. 26 do.	1	7/044	5.65	31	240	" "
do. No. 27 (Heating)	1	7/064	13.6	46	480	" "
Plug Panel No. 28 (Cargo hq.)	1	7/044	17.5	31	240	" "
Dist. Box No. 29 (General hq.)	1	7/064	11.1	46	60	" "
Dist. Box No. 30 do.	1	7/044	11.4	31	15	" "
Plug Panel No. 31 (Cargo hq.)	1	7/044	15.9	31	45	" "
Dist. Box No. 32 (Ref. rig. Tank)	1	7/044	7.15	31	390	" "
Dist. Box No. 33 (Engine Room Aux.)	1	7/044	24	31	300	" "
Dist. Box No. 34 (General lighting)	1	7/044	8.45	31	45	" "
Dist. Box No. 34a	1	7/044	24.5	31	150	" "
Dist. Box No. 35 (General lighting)	1	7/044	6.15	31	360	" "
Plug Panel No. 36 (Cargo lighting)	1	7/044	15.9	31	540	" "
Dist. Box No. 37 (Heating)	1	7/064	20.2	46	480	" "
Dist. Box No. 38 (Ref. rig. Heating)	1	7/044	7.75	31	270	" "
do. No. 39 (do.)	1	7/044	7.1	31	270	" "
Dist. Box No. 40 (hig. Eng. Workshop)	1	7/044	5.7	31	90	" "
Dist. Box No. 41 (Ref. rig. Auxiliaries)	1	7/044	14.1	31	15	" "
Dist. Box No. 42 (Engine Room Workshop)	1	7/064	33	46	120	" "
do. No. 43 (Boiler Room Auxiliaries)	1	19/044	38	87	240	VC LC
do. No. 44 (Engine Room hq.)	1	7/044	12.5	31	180	Rubber HR.
do. No. 45 (do.)	1	7/044	29	31	150	" "
do. No. 46 (Engine Room Aux.)	1	19/064	61	135	180	VC LC.
do. No. 47 (do.)	1	7/044	14.8	31	15	Rubber HR.
do. No. 48 (Engine Room hq.)	1	19/044	17.8	87	60	VC LC
do. No. 49 (do.)	1	7/044	30	31	50	Rubber HR.
do. No. 50 (Eng. Room Aux.)	1	19/064	70	135	60	VC LC.
do. No. 51 (Eng. Room hq.)	1	19/044	40.25	87	60	" "
do. No. 52 (do.)	1	7/044	20	31	50	Rubber "
do. No. 53 (Eng. Room Aux.)	1	19/064	106	135	60	VC LC.

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.			
Radar	1	19/064	50 ✓	135	450	V.C.	L.C.
W/T.	1	19/083	50 ✓	191	540	"	"
Gyro compass.	1	7/064	20 ✓	46	450.	Rubber	HR.
Mar. Indicator.	1	7/044	2 ✓	31	540	VIR.	LC.
Dist Box No. 1 (Inst. hq. etc.)	1	7/044	18 ✓	31	75	VIR	"
do. No. 2 (General lighting)	1	7/044	21 ✓	31	75	"	"
do. No. 3 (Heating)	1	19/044	54.5 ✓	87	180	VC	"
do. No. 4 (General lighting)	1	7/044	12.3 ✓	31	15	Rubber	HR.
S&F Box No. 5 (do.)	1	19/044	51.3 ✓	87	165	VC	LC.
Dist Box No. 6 (Heating)	1	19/044	57 ✓	87	165	"	"
do. No. 7 (do.)	1	19/044	50 ✓	87	165	"	"
do. No. 8 (General lighting)	1	7/044	10.6 ✓	31	210	Rubber	HR.
do. No. 9 (Heating)	1	19/064	86.5 ✓	135	210	VC	LC
S&F Box No. 10 (Eng. Room Vent)	1	19/083	91.5 ✓	191	120	"	"
Dist Box No. 12 (Heating)	1	COPPER BAR	52.5	-	-	-	-
do. No. 13 (do.)	1	do.	47.5	-	-	-	-
do. No. 14 (General lighting)	1	do.	11.5	-	-	-	-
do. No. 15 (do.)	1	do.	7.65	-	-	-	-
Plug panel No. 16 (Cargo lighting)	1	7/044	17.7 ✓	31	30	Rubber	HR.
Dist Box No. 17 (Heating)	1	19/044	77 ✓	87	120	VC	LC.
do. No. 18 (General lighting)	1	7/044	17.6 ✓	31	120	Rubber	HR.
S&F Box No. 19 (Domestic)	1	7/044	15.5 ✓	31	60	do.	"
Dist Box No. 20 (Ventilation)	1	19/044	18.7 ✓	87	360	VC	LC.
do. No. 21 (Domestic)	1	7/044	12 ✓	31	120	Rubber	HR.
do. No. 22 (General lighting)	1	7/044	5.4 ✓	31	180	"	"
do. No. 23 (do.)	1	7/044	7.4 ✓	31	225	"	"
do. No. 24 (do.)	1	7/044	19.3 ✓	31	90	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Windlass.	1	83	1	37/093	319 ✓	343	75	V.C.	L.C.
Steering Gear	2	70	1	37/083	268 ✓	296	540	"	"
Main Circ. pumps.	2	118	2	37/072	442 ✓	492	210	"	"
Air compressor	1	9	1	7/064	36 ✓	46	90	Rubber	HR.
Turbo Genr. S.W. Circ. hfr.	2	17	1	19/044	67 ✓	87	240	VC.	LC.
Ballast	1	36	1	19/083	137 ✓	191	240	"	"
Boiler O.F. Transfer.	2	22	1	19/064	86 ✓	135	330	"	"
Extraction pumps.	2	13 1/2	1	19/044	54 ✓	87	330	"	"
Aux. Feed pump.	1	2 1/2	1	7/029	11 ✓	15	60	Rubber	HR.
Diesel O.F. Transfer.	1	3 1/2	1	7/064	14 ✓	46	105	"	"
F.W. Pump.	1	10	1	7/064	40 ✓	46	300	"	"
Gen. Service Pump.	1	36	1	19/083	137 ✓	191	270	VC	LC
Standby pump	1	10	1	7/064	40 ✓	46	300	Rubber	HR.
Sanitary pump.	1	10	1	7/064	40 ✓	46	300	"	"
Genr. F.W. cooling pump	1	4 3/4	1	7/044	20 ✓	31	75	"	"
Bulge	1	20	1	19/044	78 ✓	87	150	VC	LC.
Forced lub. oil pumps	3	17	1	19/044	67 ✓	87	120	"	"
F.D. Fans.	2	60	1	37/072	225 ✓	246	300	"	"
I.D. Fans.	2	98	1	37/103	368 ✓	385	270	"	"
I.D.F. Circ. water	1	14	1	19/044	56 ✓	87	240	"	"
Boiler Room Vent Fans.	2	6 3/4	1	7/064	27 ✓	46	360	Rubber	HR.
Engine Room Vent Fans.	4	6 3/4	1	7/064	27 ✓	46	30	"	"
Boat winches	4	7 1/2	1	7/064	32 ✓	46	315	"	"
Oil Fuel Pressure pumps.	2	8	1	7/064	32 ✓	46	90	"	"
Refrig. compressors.	3	160	2	37/083	590 ✓	592	240	VCEE	LC.
" Brine Pumps	4	14	1	19/044	55 ✓	87	150	"	"
" " "	2	2	1	7/029	9.2 ✓	15	165	Rubber	HR.
" S.W. Circ. pumps	2	17	1	19/044	67 ✓	87	255	VC	LC.
Water Service pumps	1	36	1	19/083	137 ✓	191	90	"	"
Refrig. Circ. Fans.	3	11 1/4	1	19/044	45 ✓	87	150.	"	"
	3	8 1/4	1	7/064	33 ✓	46	105	HR.	HR.
	5	6 3/4	1	7/064	27 ✓	46	120	"	"
	4	3 3/4	1	7/044	15 1/2 ✓	31	90	"	"
	6	3 1/4	1	7/044	13.7 ✓	31	105	"	"
	3	3	1	7/044	12.4 ✓	31	90	"	"
	6	2 1/2	1	7/044	10.5 ✓	31	135	"	"



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The foregoing is a correct description.

Electrical Contractors.

Date March 31st '50.

COMPASSES.

Have the compasses been adjusted under working conditions

HATLAND & WOLFF
 Ltd
 SHIPBUILDERS AND ENGINEERS
 BELFAST
 1950

Builder's Signature.

Date. 31. 3. 50

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

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

Plans. Are approved plans forwarded herewith. No If not, state date of approval. 20-6-49

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.)

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

Noted and 27/4/50

Total Capacity of Generators.....1800 Kilowatts.

The amount of Fee

4/5 BEL £ 108 / - / -
5 LON £ 27 : - / -

When applied for,

7141 1950

When received,

Travelling Expenses (if any) £ 5 : 4/5 :

LONDON.

Committee's Minute.....**FRL 5 MAY 1950**

Assigned.

See E.E. muchy rpt.

R. J. Lenoir

Surveyor to Lloyd's Register of Shipping.