

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

 Date of writing Report 15th Dec. 1951 When handed in at Local Office 6.11.1951 Received at London Office 7th NOV 1951

 No. in Survey held at Glasgow Date, First Survey 14th Nov. '51 Last Survey 1st Dec. 1951
 Reg. Book.

35273 on the M.S. "BOLLSTA" (No. of Visits 14) Tons 16,400

 Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 14196 When built 10/51

 Owners Fred. Olsen & Co. Port belonging to Oslo.

 Installation fitted by Harland & Wolff Ltd. When fitted 10/51

 Is vessel equipped for carrying Petroleum in bulk Yes Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. ✓ Radar Yes

 Plans, have they been submitted and approved Yes System of Distribution Two cond.-insul. Voltage of Lighting 110

 Heating 110 Power 110 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 ✓ Have certificates of

 test for machines under 100 kw. been supplied Yes and the results found as per Rule Yes

 Position of Generators Engine room Cank top, starboard side forward.

 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 Starboard gallery
above the generating sets, engine room forward bulkhead starboard.

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 Stony sanding, 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. Air break C/breakers with C/current
& R/current protection.

 and the switch and fuse gear (or circuit breakers) for each outgoing circuit D.P. switches & fuses.

 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 6

 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 ✓
Combined ohmmeter & voltmeter.

 Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes,

 make of fuses Siemens, are all fuses labelled Yes If circuit breakers are provided for the generators, at what

 overload do they operate 850/1060A, 10 sec., and at what current do the reversed current protective devices operate 80A

 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 6v, 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 ✓ State how the cables are supported or protected Clipped to solid or perforated
galvanizer steel tray plate, structural steelwork or woodwork. Carried in
fire-proof, hard wood multiple cleats along the fore & aft gangways, the cleats
being mounted in closed steel channels.

 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 (stones only).

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position NONE.

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 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.

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. N.P.L. Flameproof type.

and where are the controlling switches fitted. In adjacent accom. space Are all fittings suitably ventilated. Yes

Searchlight Lamps, No. of 1, whether fixed or portable. Portable are they of the carbon arc or of the filament type. (Luz canal only)

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. Siemens T.2 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. Henry Hughes location of transmitter. ft. 48/49 P and receiver. ft. 48/49 S

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			Revs. per Min.	TYPE.	MAKER.
			Kilowatts per Generator.	Volts.	Ampères.			
MAIN ...	2	Lamare Scott.	75	110	682	550	Comp. Steam	L. Lison & Co.
EMERGENCY ...	1	Lamare Scott.	75	110	682	600	Oil engine	Ruston Hornsby.
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 ...	75	2	91/093	682	768	60/100/102	V.I.R.	L.S.B.
" " EQUALISEE ...	-	1	"	-	384	30/50/52	"	"
EMERGENCY GENERATOR ...	✓							
ROTARY TRANSFORMER: MOTOR	✓							
" " GENERATOR...	✓							

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

DESCRIPTION.								
Aux. Switchboard (midships).	1	61/103	337	332	648	V.I.R.	L.S.A.B.	
Shore supply.	1	0.2 0"	200	314	102	M.I.	C.S.	
Pantry equipment S.B.I.	1	37/072	108	152	250	V.I.R.	L.S.A.B.	
Workshop machinery.	1	0.03 0"	77	92	135	M.I.	C.S.	
Machinery space vent. fans.	1	0.1 0"	136	202	270	"	"	
Laundry machinery.	1	19/044	51	53	345	V.I.R.	L.S.A.B.	
Refig. machinery.	1	0.0225 0"	51	80	340	M.I.	C.S.	
Boat winches.	1	19/044	42	53	330	V.I.R.	L.S.A.B.	
Vapour extraction fan.	1	0.0225 0"	37	80	270	M.I.	C.S.	
Machinery space crane.	1	"	42	80	310	"	"	
Aft accom. vent.	1	"	26	"	390	"	"	
Engine auxiliaries S.B.17	1	"	27	"	30	"	"	

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.			
Machinery space lighting.	1	0.06 0"	132	148	135	M.I.	C.S.
Aft accom. lighting.	1	37/072	130	152	190	V.I.R.	L.S.A.B.
Galley range.	1	19/083	116	118	300	"	"
" oven.	1	19/044	40	58	"	"	"
Coffee percolators etc.	1	7/052	20	37	288	"	"
Wireless.	1	19/072	15	97	720	"	"
Navigation.	1	7/036	3	24	840	"	"
AUX. SWITCHBOARD.							
Bridge & Floodlighting.	1	7/036	21	24	96	V.I.R.	L.S.B.
" " "	1	19/044	30	53	126	"	"
Luz canal Projector.	1	19/064	35	83	636	"	L.S.A.B.
Upper Bridge & Acc. Nav. lighting.	1	7/036	11	24	126	"	L.S.B.
Lower Bridge lighting.	1	7/044	24	31	36	"	"
Pump Rooms	1	7/036	18	24	"	"	"
Forecastle lighting.	1	7/044	12	31	420	"	L.S.A.B.
Pantry equipment.	1	19/064	54	83	102	"	L.S.B.
Radar.	1	7/044	20	31	45	"	"
Luzo compass.	1	7/044	13	31	45	"	"
Boat winches.	1	19/044	48	53	180	"	L.S.A.B.
Ventilation.	1	7/044	26	31	132	"	"
F.W. pump.	1	7/036	17	24	105	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Running gear.	1	25	1	0.1 0"	192	202	210	M.I.
Air compressor.	1	3	1	0.01 0"	26	45	138	"
Oil purifiers.	3	6	1	0.0225 0"	49	80	260	"
Steering gear.	2	20	1	37/083	152	184	407/414	V.I.R.
Crab. feed pump.	1	1.5	1	0.007 0"	13	30	60	M.I.
S.W. Circ. pump - Aux. diesel	1	1.5	1	"	12	30	50	"

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.

HARLAND AND WOLFF, LIMITED.

John V. Smith

DIRECTOR

Electrical Contractors.

Date

COMPASSES.

Have the compasses been adjusted under working conditions.

Yes.

HARLAND AND WOLFF, LIMITED.

John V. Smith

DIRECTOR

Builder's Signature.

Date

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

Yes

Is this installation a duplicate of a previous case

Yes

If so, state name of vessel

H.W. Ltd #1406

Plans. Are approved plans forwarded herewith

No

If not, state date of approval

22.9.50

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 installation fitted in this ship has been installed under the supervision of the Surveyors in accordance with the Rules, the approved plans & the Secretary's letters, tested under full working conditions & found satisfactory. The materials & workmanship are good.

Noted DRU 21-11-51

Total Capacity of Generators

225

Kilowatts.

The amount of Fee ...

£ 75 : 15

When applied for,

19

When received,

19

Travelling Expenses (if any) £

:

:

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW

6 NOV 1951

Assigned

EE ACCOMPANYING MACHINERY REPORT