

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 29 JUL 1953Date of writing Report 30. 6. 1953 When handed in at Local Office 24. 7. 1953 Port of GlasgowNo. in Survey held at Port Glasgow + Glasgow Date, First Survey 2<sup>nd</sup> April 1953 Last Survey 24<sup>th</sup> June 1953  
Reg. Book. (No. of Visits 8)91670 on the m.v. "BEDFORD" Tons { Gross 12800  
Net 7550Built at Port Glasgow By whom built Lithgows Ltd. Yard No. 1070 When built 1953Owners Blandford Shipping Co. Ltd. Port belonging to LondonInstallation fitted by The Sunderland Forge and Engineering Co. Ltd. When fitted 1953Is 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 YesPlans, have they been submitted and approved Yes System of Distribution 2-Wire Insulated Voltage of Lighting 110Heating — 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 YesAre the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole NegativeHave machines 100 kw. and over been inspected by the Surveyors during manufacture and testing — Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes Position of Generators Starboard side, forward end of engine roomIs 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 On platform, forward bulkhead, starboard side of engine room.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 Sindawyp, 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 3-pole circuit-breakers with two overload trips and reverse current tripand the switch and fuse gear (or circuit breakers) for each outgoing circuit Double-pole switches and fusesAre 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 are the ammeters and reverse current projection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided earth lamps with switches and fuses Preference Tripping, state if provided No, and tested —Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses Siemens 'Zed' type, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 150% full load current, and at what current do the reverse current protective devices operate less than 15% full load current 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 less than 6% volts Are all paper insulated and varnished cambric insulated cables sealed at the ends YesAre 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 State type of cables (if in conduit this should also be stated) in machinery spaces VIRLCAB & VCLCAB, galleys VIRLCAB and laundries VIRLCAB State how the cables are supported or protected Mains:— VCLCAB cables clipped to steel plate Machinery Space:— LCAB cables clipped to steel plate or perforated tray Accommodation:— LC cables clipped to woodwork or steelwork.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 (Domestic only)Have refrigeration fan motors been constructed under survey — and test certificates supplied —Are the motors accessible for maintenance at all times Yes

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

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, fitted and adequately ventilated as per Rule Yes, state battery capacity in ampere hours — Where required to do so does it comply with 1948 International Convention —

Lighting, is fluorescent lighting fitted No If so, state nominal lamp voltage — and compartments where lamps are fitted —

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

Searchlights, No. of —, whether fixed or portable —, are they of the carbon arc or of the filament type —

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 — 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 — 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 sea services been supplied and the results found as per Rule Yes

Lightning Conductors, where required are they fitted as per Rule —

Ships carrying Oil having a Flash Point of 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 'Zed' type Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships Yes Are all cables lead covered as per Rule Yes

E.S.D., if fitted state maker Kelvin Hughes location of transmitter and receiver Frames 48 & 49 Port + Starboard 7 ft. apart.

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				TYPE.	PRIME MOVER.
			Kw. per Generator.	Volts.	Ampères.	Revs. per Min.		
MAIN	2	Sunderland Forge & Eng. Co. Ltd.	40	110	363	640	Steam	Sunderland Forge & Eng. Co. Ltd.
	1	Sunderland Forge & Eng. Co. Ltd.	40	110	363	750	Diesel	Ruston Hornsby
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	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	3	40	2	19/083	363	2x202	114	VC	LCAB
" " EQUALISER			1	19/083	—	—	202	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

DESCRIPTION.	No. of	Kw.	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.	
Midship Sub-Switchboard	2		2	37/103	205	2x408	600 VC LCAB
Crew aft Power S.B.	1		1	19/083	147	202	300 " "
Crew aft lighting S.B.	1		1	19/083	122	202	120 " "
Shore connection	1		1	19/083	200	202	105 " "

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

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.			
Wireless	1	7/064	15	80	100	VC	LC
Navigation lighting	1	7/064	23	80	112	"	"
Bridge Deck lighting Starboard	1	7/044	23	31	16	Rubber	"
" " Port	1	7/044	18	31	56	"	"
Lower Bridge Deck lighting	1	7/064	31	80	60	VC	"
Boat + Flood lighting	1	7/064	33	80	112	"	"
Upper Deck aft lighting	1	7/044	15	31	256	Rubber	"
" " Port	1	7/044	20	31	112	"	"
Roop Deck aft	1	7/044	15	31	160	"	"
" " Starboard	1	7/064	28	80	160	VC	"
Engine Room lighting	1	19/064	85	143	90	"	LCAB
Aft Power D.B.	1	7/064	25	80	48	"	LC
Laundry Power	1	7/064	68	80	80	"	"
Engine Room Aux. No 1	1	19/064	122	143	300	"	LCAB
" " " No 2	1	7/064	75	80	225	"	"
" " " No 3	1	19/083	150	202	165	"	"
" " " No 4	1	19/064	94	143	210	"	"
Gyro compass	1	7/044	10	31	120	Rubber	LC
Radar	1	7/064	30	80	120	VC	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	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.	
Refrigerating compressor	1	7.5	1	7/064	61	80	20 VC LCAB
Vent. Fans Accom.	3	5.5	1	7/064	46	80	120 " LC
Engine Room Vent. Fans	2	4	1	7/064	35	80	144 " LCAB
F.O. Purifiers	3	3.75	1	7/064	33	80	50 " "
2 F.W. & 2 S.W. Pumps	4	3.5	1	7/064	31	80	24 " "
L.O. Purifier	1	3.2	1	7/044	26	31	120 Rubber "
Boiler Room Vent. Fans	1	2.75	1	7/044	24	31	340 " "
Lathe	1	2	1	7/044	18	31	48 " "
F.O. Pumps	3	0.9	1	7/029	8	15	90 VC "
Sludge Pump	1	0.5	1	7/064	5	10	72 Rubber "

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.

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.

Per Pro. THE SUNDERLAND FORGE & ENGINEERING CO. LTD., Electrical Contractors. Date 16.7.53.

*J. B. Shank*  
DIRECTOR.

COMPASSES.

Have the compasses been adjusted under working conditions. *Yes*

LITHGOWS LIMITED.

*D. B. Cunningham*

Builder's Signature.

Date 23rd July, 1953.

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

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 11.8.52

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

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.)

The electrical installation of this vessel has been fitted on board under Special Survey, tested under working conditions and found satisfactory. The quality of materials and workmanship is good.

*EMM*  
*24/7/53*

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators 120 Kilowatts.

The amount of Fee ... £ 60 : - : When applied for,

*At Lrk 19*

Travelling Expenses (if any) £ 1 : 4 : When received, 19

*J. B. Shank*  
*Fred B. Mort*  
Surveyor to Lloyd's Register of Shipping.

GLASGOW 28 JUL 1953

Committee's Minute

Assigned *See Lrk F.E. Mch Report No. 2495H*

