

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office OCT 28 1938

Date of writing Report 27/12/1038 When handed in at Local Office 27/12/1038 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle Date, First Survey 29 Aug. Last Survey 11 Oct. 1938.
 Reg. Book Suff. (Number of Visits 8)

on the S.S. "LIDA" Tons { Gross 1387.30
 Net 771.22

Built at Newcastle By whom built Swan Hunter & Wigham Rb. & Co. Ltd Yard No. 1602 When built 1938

Owners Polish Baltic Steamship Co. Port belonging to Gdansk

Electric Light Installation fitted by Swan Hunter & Wigham Rb. & Co. Ltd Contract No. 1602 When fitted 1938

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Double wire

Pressure of supply for Lighting 110 volts, Heating - volts, Power 110 volts.

Direct or Alternating Current, Lighting Direct Power Direct

If alternating current system, state frequency of periods per second -

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes

Generators, do they comply with the requirements regarding temperature rise Yes, are they compound wound Yes

are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator

Where more than one generator is fitted are they arranged to run in parallel -, is an adjustable regulating resistance fitted in series with each shunt field Yes

Have certificates of test results for machines under 100 kw. been submitted and approved Yes

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing -

Have certificates for generators under 100 kw. been supplied and approved Yes

Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes

Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators Engine room, is the ventilation in way of the generators satisfactory Yes

are they clear of all inflammable material Yes if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators - and -

are the generators protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generators in metallic contact Yes

Main Switch Boards, where placed Engine room

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard -

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam or oil Yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards - and -

are they constructed wholly of durable, non-ignitable non-absorbent materials Yes

is all insulation of high dielectric strength and of permanently high insulation resistance Yes

is it of an approved type Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes

is the non-hygroscopic insulating material of an approved type Yes, and is the frame effectively earthed Yes

Are the fittings as per Rule regarding:— spacing or shielding of live parts Yes

accessibility of all parts Yes, absence of fuses on back of board Yes, temperature rise of omnibus bars Yes

individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the "off" position No

are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side of switches No

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

D.P. switch & D.P. fuses for generator, D.P. switch & D.P. fuses for each outgoing circuit

Are turbine driven generators fitted with emergency trip switch as per rule None Are cupboard or compartments containing switchboards composed of fire-resisting material or lined with approved material Yes

Instruments on main switchboard one ammeters one

voltmeters no synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection Yes

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Lamps connected to earth through switches & fuses. Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

are the fusible cutouts of an approved type Yes have the reversed

current protection devices been tested under working conditions yes are all fuses labelled as per rule yes

Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes

Cables: Single, twin, concentric, or multicore Single are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules yes

If the cables are insulated otherwise than as per Rule, are they of an approved type — **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 4.5 Volts **Cable Sockets,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes **Paper Insulated and Varnished Cambric Insulated Cables,** If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound None or waterproof insulating tape — **Cable Runs,** are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable 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, bathrooms and lavatories lead covered or run in conduit Lead Covered

Support and Protection of Cables, state how the cables are supported and protected L.C. in accommodation, & C. & A. in machinery spaces.

If cables are run in wood casings, are the casings and caps secured by screws None, are the cap screws of brass —, are the cables run in separate grooves — If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII yes

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements None

Joints in Cables, state if any, and how made, insulated, and protected None

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands yes

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed yes state the material of which the bushes are made Rubber

Earthing Connections, state what earthing connections are fitted and their respective sectional areas None are their connections made as per Rule yes

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule yes **Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven None

Navigation Lamps, are these separately wired yes controlled by separate switch and separate fuses yes are the fuses double pole yes are the switches and fuses grouped in a position accessible only to the officers on watch yes has each navigation lamp an automatic indicator as per Rule yes **Secondary Batteries,** are they constructed and fitted as per Rule None are they ventilated as per Rule —

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight yes are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected None are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None how are the cables led —

where are the controlling switches situated —

are all fittings suitably ventilated yes are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials yes

Heating and Cooking Appliances, are they constructed and fitted as per Rule None are air heaters constructed and fitted as per Rule —

Searchlight Lamps, No. of None whether fixed or portable — are their fittings as per Rule —

Motors, are their working parts readily accessible yes are the coils self-contained and readily removable for replacement yes are the brushes, brush holders, terminals and lubricating arrangements as per Rule yes are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material yes are they protected from mechanical injury and damage from water, steam or oil yes are their axes of rotation fore and aft yes if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type — if not of this type, state distance of the combustible material horizontally or vertically above the motors — and — have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing None have certificates for all motors for essential services been supplied and approved None

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule yes **Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule yes **Ships carrying oil having a Flash Point less than 150° F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings — are all fuses of the fitted cartridge type — are they of an approved type — If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces — **Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule yes are they suitably stored in dry situations yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	8	110	72.	Steam Engine			
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	.06	179	.064	72	83.	20.	Rubber	L.C. & A.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	.01	4	.044	21.5	31.	25	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
Midships & Navigation	1	.01	4	.044	15.5	31.	120	"	"
Life Deck	1	.0045	4	.029	8	18.2	220	"	"
WIRELESS	1	.01	4	.044	10	31	180	"	"
SEARCHLIGHT									
MASTHEAD LIGHT	1	.002	3	.029	.36	4.8	260	"	Lead Covered.
SIDE LIGHTS	1	.002	3	.029	.36	4.8	60	"	"
COMPASS LIGHTS	1	.002	3	.029	.09	4.8	40	"	"
TOP LIGHTS	1	.002	3	.029	.36	4.8	250	"	"
CARGO LIGHTS	1	.01	4	.044	18	31.	120	"	L.C. & A.
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	.003	3	.036	8	12	30	Rubber	L.C. & A.
WORKSHOP MOTOR										
VENTILATING FANS										

The Electrical Equipment is installed in accordance with the approved plans.
 All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
 The foregoing is a correct description.

FOR
 SWAN, HUNTER, & WIGHAM RICHARDSON, LTD Electrical Engineers.

Date 25th Oct 1938

COMPASSES.

Minimum distance between electric generators or motors and standard compass 65 feet.
 Minimum distance between electric generators or motors and steering compass 60 feet.
 The nearest cables to the compasses are as follows:—
 A cable carrying .09 Amperes in feet from standard compass in feet from steering compass.
 A cable carrying .36 Amperes 4 feet from standard compass 4 feet from steering compass.
 A cable carrying 4 Amperes 9 feet from standard compass 6 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 all course in the case of the standard compass, and nil degrees on all course in the case of the steering compass.

FOR SWAN, HUNTER & WIGHAM RICHARDSON, LTD
 J. H. Morrison Builder's Signature. Date 26th Oct 1938

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

General Remarks (State quality of workmanship, opinions as to class, etc. The above instⁿ has been fitted out under special survey. The materials used & workmanship are good. The dynamo, governor & the whole instⁿ has been ex^d & tested under working conditions & found satisfactory. The insulation resistance is good.

Noted
 W.T. Badger
 28/10/38

Total Capacity of Generators 8 Kilowatts.

The amount of Fee ... £ 8 : : When applied for. 26/10/1938
 Travelling Expenses (if any) £ : : When received. 1/11 1938

W.T. Badger
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 1 NOV 1938

Assigned See F. G. Rpt.

201.12.36.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minutes.

ENCLOSURE No 449