

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office **AUG 27 1937**

Date of writing Report _____ When handed in at Local Office **26 AUG 1937** Port of **Newcastle/Tyne**

No. in Survey held at **Newcastle** Date, First Survey **15 June** Last Survey **5th August 1937**
 Reg. Book. **S.S.** (Number of Visits.....12.....)

40851 on the **S S "YENANGYAUNG"**

Built at **Newcastle** By whom built **S H W R Co Ltd** Yard No. **1531** Tons { Gross **5447**
 Net **3031** When built **1937**

Owners **Butmah Oil Co Ltd** Port belonging to **Rangoon**

Electric Light Installation fitted by **S H W R Co** Contract No. **1531** When fitted **1937**

Is the Vessel fitted for carrying Petroleum in bulk **Yes**

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 **Yes** ✓, 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 _____

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 starboard** ✓, 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 starboard side** ✓

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 _____

is the non-hygroscopic insulating material of an approved type _____, 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 **T.P.C.B for each main generator. DPB & DP fuses on each outgoing circuit**

Are turbine driven generators fitted with emergency trip switch as per rule **none** ✓

Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material **Yes** ✓

Instruments on main switchboard **2** ✓ ammeters **2** ✓

voltmeters _____ 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 **E lamps coupled to 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 / 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 or XI of the Rules Yes /

If the cables are insulated otherwise than as per Rule, are they of an approved type Yes / **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 4.8 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 Yes / or waterproof insulating tape Yes /

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 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. A+B in machinery spaces & crew quarters. Ditto in galv iron pipes along decks. L.C. A+B in acc. clipped to structure /

If cables are run in wood casings, are the casings and caps secured by screws Yes / are the cap screws of brass Yes / are the cables run in separate grooves Yes / 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 Yes /

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

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 Lead /

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Yes / 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 Yes /

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 Yes /

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 Yes in pump room /

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected special gaslight fittings in solid galv. screwed conduit / how are the cables led in midship acc. /

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 Yes / are air heaters constructed and fitted as per Rule Yes /

Searchlight Lamps, No. of 1 / whether fixed or portable Yes / are their fittings as per Rule Yes /

Arc Lamps, other than searchlight lamps, No. of 1 / are their live parts insulated from the frame or case Yes / are their fittings as per Rule Yes /

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 Yes / if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes /

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing Yes / **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 Yes / are all fuses of the filled cartridge type Yes / are they of an approved type Yes /

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office Yes /

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule 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	2	25	110	228	600	1 Steam 1 Diesel	Diesel Oil	Over 150° F.
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rate.			
MAIN GENERATOR	1	.3	19	.083	229	240	50	Y.I.R	L.C. A + B
EQUALISER CONNECTIONS	1	.2	19	.083		118	25		"
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	.01	7	.044	26	31	50	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS	1	.0225	7	.064	24	46	400	"	"
ACCOMMODATION									
Donkey	1	.01	7	.044	8	31	540	"	"
Midships	1	.06	19	.064	67	83	360	"	"
Aft	1	.0225	7	.064	46	46	50	"	"
WIRELESS	1	.0225	7	.064	15	46	400	"	"
SEARCHLIGHT	1	.002	3	.029	.36	7.8	300	"	"
MASTHEAD LIGHT	1	.002	3	.029	.36	7.8	100	"	L.C. A + B
SIDE LIGHTS	1	.002	3	.029	.09	7.8	60	"	"
COMPASS LIGHTS	1	.002	3	.029	.36	7.8	600	"	"
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rate.			
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	.0225	7	.064	40	46	80	Y.I.R	L.C. A + B
WORKSHOP MOTOR										
VENTILATING FANS										
Refing machine	1	1	.075	19	.072	88	97	80	"	"
Brine pump	1	1	.0045	7	.029	12	18.2	80	"	"
Water pump	1	1	.0045	7	.029	12	18.2	80	"	"
Oil Separator	3	1	.0045	7	.029	16	18.2	60	"	"
F.O. Priming pump	1	1	.0045	7	.029	12	18.2	60	"	"
S.L. Diluter pump	1	1	.002	3	.029	4	7.8	50	"	"
Vaporiser fan	1	1	.0045	7	.029	16.4	18.2	60	"	"
S.O. fan	1	1	.0225	7	.064	42	46	80	"	"
CRANE	1	1	.01	7	.044	24	31	60	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The 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

10th Aug 1937

COMPASSES.

Distance between electric generators or motors and standard compass 165 feet

Distance between electric generators or motors and steering compass 160 feet

The nearest cables to the compasses are as follows:—

A cable carrying .09 Ampères on the feet from standard compass 5 feet from steering compass.

A cable carrying .09 Ampères 5 feet from standard compass on the feet from steering compass.

A cable carrying 1.08 Ampères 8 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.

Builder's Signature.

Date

10th Aug 1937

Is this installation a duplicate of a previous case — If so, state name of vessel —

General Remarks (State quality of workmanship, opinions as to class, &c. The above installation has been)

fitted out under special survey. The materials used and the workmanship are good. On completion the dynamo, governors, circuit breakers, main board, switches, fuses, cables, motors and fittings were examined and tested under working conditions and found satisfactory and suitable for a classed vessel. The insulation resistance was tested and found good. This vessel is eligible in my opinion, to have the notations E.S.D. and D.F. in the Register Book.

W.T. Badger
11/9/37

Total Capacity of Generators 50 Kilowatts.

The amount of Fee ... £ 27 : 10 : 26 AUG 1937

Travelling Expenses (if any) £ : : 7.9.19.37/89

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

Committee's Minute

FRI 3 SEP 1937

Assigned

See Acc. JE 95379

2m.5.3.1.—Transfer.
The Signatories are requested not to write on or below the space for Committee's Minute.



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