

Rpt. 13.

No. 18121

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report... 14 March 1941

When handed in at Local Office... 10 March 1941

Port of... Harlepool

Received at London Office...

MAR 13 1941

No. in Survey held at... West Harlepool

Date, First Survey... 31st Mar, 40

Last Survey... 3rd March 1941

Reg. Book... Suppt.

(Number of Visits... 7)

88516 on the... S.S. "IKARNA"

Tons

Gross... 6,793.06

Net... 3,969.29

Built at... West Harlepool

By whom built... Com. Sanyer, Ltd.

Yard No... 1106

When built... 1941

Owners... British India Steam Nav. Co., Ltd.

Port belonging to... London

Electrical Installation fitted by... The Harlepool & Eng. Co., Ltd.

Contract No... 1106

When fitted... 1941

Is vessel fitted for carrying Petroleum in bulk... No Is vessel equipped with D.F... No E.S.D... No Gy.C... No Sub.Sig... No

Have plans been submitted and approved... Yes System of Distribution... Double wire Voltage of supply for Lighting... 110

Heating... 110 Power... 110 Direct or Alternating Current, Lighting... Yes Power... Yes If Alternating Current state frequency... Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off... Yes Are turbine emergency governors fitted with a

trip switch as per Rule... Generators, are they compound wound... Yes, are they level compounded under working conditions... Yes

if not compound wound state distance between generators... and from switchboard... Where more than one generator is fitted are they

arranged to run in parallel... No, are shunt field regulators provided... Yes Is the compound winding connected to the negative or positive pole

Position... 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 Are the lubricating arrangements and the construction

of the generators as per rule... Yes Position of Generators... Engine room standard side aft

is the ventilation in way of generators satisfactory... Yes are they clear of inflammable material... Yes, if situated

near unprotected combustible material state distance from same horizontally... and vertically... are the generators protected from mechanical

injury and damage from water, steam and oil... Yes, are the bedplates and frames earthed... Yes and the prime movers and generators in metallic

contact... Yes Switchboards, where are main switchboards placed... Engine room standard side on

raised platform beside engine room side

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

and oil... Yes, if situated near unprotected combustible material state distance from same horizontally... and vertically... what insulation

material is used for the panels... Slate and asbestos, 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... Yes Is the frame effectually earthed... Yes

Is the construction as per Rule... Yes, including accessibility of parts... Yes, absence of fuses on the back of the board... Yes, individual fuses

to pilot and earth lamps, voltmeters, etc... Yes locking of screws and nuts... Yes, labelling of apparatus and fuses... Yes, fuses on the "dead"

side of switches... Yes Description of Main Switchgear for each generator and arrangement of equaliser switches... Double pole

quick break knife switch and double pole fuse.

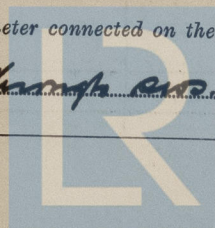
and for each outgoing circuit... Single pole three way knife switch and double

pole fuse.

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

ammeters... Three voltmeters... synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection... Earth Testing, state means provided... Elamps coupled to E through ear fuses.



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Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type Yes, are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Yes. Cables, are they insulated and protected as per the appropriate Tables of the Rules Yes, if otherwise than as per Rule are they of an approved type Yes, state maximum fall of pressure between bus bars and any point under maximum load 5.5 mm, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Yes with insulating compound Yes or waterproof insulating tape 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 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 Yes. State how the cables are supported and protected H.R.B. cables run on deck in galv. pipe and clipped to surfaces in engine room; sub. circuits in machinery spaces wired with L.C.B. cable clipped to surfaces; L.C.B. cables clipped on wood grounds or on surfaces in accommodation. Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule 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 and with what material Lead or fibre. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Yes and method of control Yes. Navigation Lamps, are they separately wired Yes controlled by separate double pole switches Yes 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. Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are 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. Are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of Yes, whether fixed or portable Yes, are their fittings as per Rule 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 Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally Yes and vertically 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 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 the 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 flameproof type Yes. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Yes, are they suitably stored in dry situations Yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 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 ...	3	30	110	273	685	Single cylinder steam engines		
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATORS ...	3 x 30	1	57/183	273	296	481	V.C.	L.C.B.
" " EQUALISER ...						401 361		
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...								
Officers' Ldg. S.B. feed:-	1	7/0.64	28	46	192	V.I.R.	H.R.B.	
Engineers' Ldg. S.B. feed:-	1	7/0.64	23	46	72	V.I.R.	H.R.B.	
Officers' Ldg. S.B. feed:-	2	19/0.64	160	166	192	V.I.R.	H.R.B.	
Engineers' Ldg. S.B. feed:-	2	19/0.64	150	166	72	V.I.R.	H.R.B.	
Cargo Ldg. S.B. feed:-	1	19/0.64	47	83	72	V.I.R.	H.R.B.	
Refining S.B. feed:-	1	7/0.64	35	46	60	V.I.R.	H.R.B.	
Engine Room S.B. feed:-	1	7/0.64	37	46	60	V.I.R.	H.R.B.	
Workshop S.B. feed:-	1	7/0.64		46	60	V.I.R.	H.R.B.	

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	7/0.64	20	31	382	V.I.R.	H.R.B. & L.C.B.	
NAVIGATION LIGHTS ...	1	7/0.64	13	46	382	V.I.R.	H.R.B. & L.C.B.	
LIGHTING AND HEATING ...								
Off. Ldg. S.B.	1	7/0.64	19	46	432	V.I.R.	H.R.B.	
3 sets off. off. Ldg. S.B.	1	7/0.36	10, 6, 12	24	15, 6, 75	V.I.R.	L.C.B.	
2 sets off. Engine Ldg. S.B.	1	7/0.36	1, 1/2	24	1, 1, 84	V.I.R.	L.C.B.	
3 sets off. Engine Ldg. S.B.	1	19/0.64	43, 6, 52	83	15, 6, 75	V.I.R.	L.C.B.	
2 sets off. Engine Ldg. S.B.	1	19/0.64	82, 68	83	14, 84	V.I.R.	L.C.B.	
2 sets off. Cargo Ldg. S.B.	1	7/0.64	27, 20	46	12, 15	V.I.R.	Eng. H.R.B. & L.C.B.	
Engine Room Ldg. S.B. & L.C.B.	1	7/0.64	30	46		V.I.R.	H.R.B.	

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Engine Room Vent Fans	3	2	1	7/0.64	18	31	30, 60, 40	V.I.R. L.C.B. & H.R.B.
Oil Separator	1	5	1	7/0.64	4.75	31	45	V.I.R. L.C.B. & H.R.B.
Refining Mfr.	1	3	1	7/0.64	25	31	8	V.I.R. H.R.B.
Cargo Pump	1	1	1	3/0.06	9	12	230	V.I.R. H.R.B.
Fan	1	6000	1	3/0.29	5	7.8	40	V.I.R. H.R.B.
Auto cleaning mtr	1	0.75	1	7/0.29	7	18.2	130	V.I.R. L.C.B. & H.R.B.
Oil off Workshop S.B.	*		1	7/0.64		31		V.I.R. L.C.B. & H.R.B.
Lights	*		1	7/0.64		31		V.I.R. L.C.B. & H.R.B.
Note: Circuits wired for diesel and turbo motors to be fitted as per Rule.								

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.

16 Essex *Sunderland Forge & Eng. Works* Electrical Engineers. Date *3. 3. 1941*
Abbey.

COMPASSES. *The undermentioned deviations are those due to the electrical equipment described herein only.*

Minimum distance between electric generators or motors and standard compass *112 feet*

Minimum distance between electric generators or motors and steering compass *106 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *14* Ampères *on the* *7* feet from standard compass *7* feet from steering compass.

A cable carrying *14* Ampères *7* feet from standard compass *on the* *7* feet from steering compass.

A cable carrying *14* Ampères *7* feet from standard compass *on the* *7* 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 *his* degrees on *every* course in the case of the

standard compass, and *his* degrees on *every* course in the case of the steering compass.

Thos. S. Simpson Builder's Signature. Date *6. 3. 41*

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *Scots*

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 under special

survey. The materials used and the workmanship are good.

On completion the equipment was run under working

conditions with satisfactory results and the insulation

resistance of all circuits was measured and found good.

This equipment is in my opinion suitable for a classed

vessel.

Noted

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Total Capacity of Generators *90* Kilowatts.

The amount of Fee ... £ *31* : *10* : ... When applied for, *19*.....

Travelling Expenses (if any) £ : : When received, *19*.....

Committee's Minute *THE 18 MAR 1941*

Assigned *See H.M. 7E 18/21*

Santison

Surveyor to Lloyd's Register of Shipping.



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