

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 21 AUG 1930

Date of writing Report

19

When handed in at Local Office

20/8/30

Port of

No. in Survey held at

Newcastle.

Date, First Survey

17 March

Last Survey

9 May

1930

Reg. Book.

70548 on the

M. K. "Erina"

(Number of Visits) 6

Tons

Gross

Net

Built at

Newcastle.

By whom built

S. W. G. Armstrong Whitworth

No. 1060

When built

1930

Owners

Hansen - Jørgen

Port belonging to

Xiansand

Electric Light Installation fitted by

Armstrong Whitworth & Co. Ltd.

Contract No. 1060

When fitted 1930

Is the Vessel fitted for carrying Petroleum in bulk

yes

System of Distribution

Double wire

Pressure of supply for Lighting

110

volts, Heating

110

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 rating

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

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

Port side of engine room on dynamo flat

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

Port side of 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

, 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

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

, proportion of omnibus

bars

yes

, individual fuses to voltmeter, pilot or earth lamp

yes

, connections of switches

yes

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

with overload & reverse current attachments for main generators, D.P. switches & D.P. fuses for aux generator each outgoing circuit

Instruments on main switchboard

three

ammeters

three

volts

synchronising device for paralleling purposes

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

Earth leakage

detector

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

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 twin* are the cables insulated and protected as per Tables IV or V of the Rules *Yes*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *3.5 bolts*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *Yes*

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound

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*

Support and Protection of Cables, state how the cables are supported and protected *Lead covered in acc. Lead cov + arm'd in machinery spaces & along fore & aft gangways*

If cables are run in wood casings, are the casings and caps secured by screws —, 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, if lights are fitted, are the cables and fittings in accordance with the special requirements —

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 —, are their connections made as per Rule —

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 —

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 —

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 —

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *gaslight fittings in pump room in steel gaslight conduit*, how are the cables led —

where are the controlling switches situated *in bridge house*

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

Arc Lamps, other than searchlight lamps, No. of —, are their live parts insulated from the frame or case —, 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 *Yes*, if not of this type, state distance of the combustible material horizontally or vertically above the motors — and —

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 —

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*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *Yes*

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN ...	2	30	110	260	275	Diesel Engines			
AUXILIARY	1	10	110	91	380	Steam do			
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	1	.4064	61	.093	260	288	30	Y.I.R	Lead cov + arm'd
EQUALISER CONNECTIONS	1	.1964	34	.083	-	184	30	do	do
AUXILIARY GENERATOR...	1	.07592	19	.072	91	97	40	do	do
EMERGENCY GENERATOR									
ROTARY TRANSFORMER { MOTOR GENERATOR...									
ENGINE ROOM <i>Sec. Box</i>	1	.01046	7	.044	27.5	31	30	do	do
NAVIG. ROOM <i>do</i>	1	.00701	7	.036	6.04	24	600	do	do
AUXILIARY SWITCHBOARDS									
MIDSHIP ACCOMMODATION <i>Sec. Box</i>	1	.06	19	.064	33.4	83	54.0	do	do
OFFICERS. ACC. D.B.	1	.00299	3	.036	9.0	12	40	do	Lead covered
BRIDGE SPACE D.B.	1	.00455	7	.029	6.1	18.2	12	do	do
AFT ACCOM. D.B.	1	.01046	7	.044	18.6	31	140	do	Lead cov + arm'd
WIRELESS	1	.01462	7	.052	10	37	600	do	do
SEARCHLIGHT									
MASTHEAD LIGHT	1	.00194	3	.029	.34	7.8	300	do	Lead cov + arm'd turn
SIDE LIGHTS	1	.00194	3	.029	.34	7.8	40	do	do
COMPASS LIGHTS	1	.00194	3	.029	.13	7.8	20	do	Lead covered.
STERN LIGHTS	1	.00194	3	.029	.34	7.8	600	do	Lead cov + arm'd turn
CARGO LIGHTS	1	.00194	3	.029	1.63	7.8	80	do	do
ARC LAMPS									
HEATERS <i>Hot Plate Oil Heater</i>	1	.00701	7	.036	18.2	24	100	do	Lead cov + arm'd
	1	.00299	3	.036	8	12.0	80	do	Lead cov + arm'd

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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
REFRIG. MOTOR <i>Refrigerator Pump</i>	1	1	.02214	7	.064	42	46	200	Y.I.R	Lead cov + arm'd
MAIN BILGE LINE PUMPS	1	1	.0396	19	.052	59	64	140	do	do
GENERAL SERVICE PUMP	1	1	.0396	19	.052	59	64	160	do	do
LUB. OIL PURIFIER <i>Refrigerator Bilge Pump</i>	2	1	.00455	7	.029	18	18.2	20	do	do
SANITARY PUMP										
AIR BLOWER <i>Refrigerator Bilge Pump</i>	1	1	.00455	7	.029	12.21	18.2	150	do	do
PORTABLE EMER. WHEEL <i>Refrigerator Bilge Pump</i>	1	1	.00299	3	.036	5	12.0	85	do	do
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR...	1	1	.02214	7	.064	48	46	30	do	do
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	1	1	.01046	7	.044	26.5	31	50	do	do
OIL FUEL TRANSFER PUMP	1	1	.01046	7	.044	26.5	31	180	do	do
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR...										
(b) MAIN MOTOR ...	1	1	.06	19	.064	80	83	260	do	Lead cov + arm'd
WORKSHOP MOTOR	1	1	.01462	7	.052	31	37	260	do	do
VENTILATING FANS										
Eng. Aux. Pot. S. Box	1	1	.0396	19	.052	57	64	30	do	do
do SHED do	1	1	.07592	19	.072	80	97	170	do	do

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

Sir W. G. Armstrong Whitworth & Co. Ltd.

Electrical Engineers.

Date 18/8/1930

COMPASSES.

Distance between electric generators or motors and standard compass 190 feet

Distance between electric generators or motors and steering compass 180 feet

The nearest cables to the compasses are as follows:—

A cable carrying .13 Ampères on the ~~same~~ standard compass 8 feet from steering compass.

A cable carrying .13 Ampères 8 feet from standard compass on the feet from steering compass.

A cable carrying Ampères feet from standard compass 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 for degrees on all course in the case of the steering compass.

MR W. G. ARMSTRONG, WHITWORTH & CO. (SHIPBUILDERS), LTD.

Stewart
MANAGING DIRECTOR.

Builder's Signature.

Date 18 AUG. 1930

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, &c.)

The above installation is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation elec light wireless

It is submitted that
this vessel is eligible for
THE RECORD.

elec. light

D.M. 3/9/30

Total Capacity of Generators 70 Kilowatts.

The amount of Fee ... £ 29: 10 : { When applied for, 24.5.19.30

Travelling Expenses (if any) £ : : { When received, 2.6.19.30

W. T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

elec. light