

31 OCT 1928

No. 6566

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN) FOR THE PROPULSION OF THE VESSEL

Received at London Office

4 OCT 1928

Date of writing Report Oct 3rd 1928 When handed in at Local Office Oct 3rd 1928 Port of MANCHESTER

No. in Survey held at MANCHESTER Date, First Survey May 2nd Last Survey Sept 7th 1928
(Number of Visits 19)

Reg. Book. M. O. P. 5 B A Tons { Gross 427
Net 155

Built at Glasgow By whom built Messrs Yarrow & Co. Ltd. Yard No. 1559 When built

Owners Director General of Navigation & Harbours Port belonging to Buenos Ayres

Electric Light Installation fitted by Contract No. When fitted

System of Distribution Two wire, direct current.

Pressure of supply for Lighting _____ volts, Heating _____ volts, Power 250 volts, variable

Direct or Alternating Current, Lighting _____ 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 _____

Generators, do they comply with the requirements regarding overload Yes, are they compound wound no, shunt wound.

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

Where more than one generator is fitted are they arranged to run in parallel No, is an adjustable regulating resistance fitted in

series with each shunt field Yes

Are all terminals accessible and clearly marked Yes, are they so spaced or shielded that they cannot be accidentally earthed,

or short circuited Yes Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators _____

is the ventilation in way of the generators satisfactory _____, are they clear of all inflammable material _____

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 _____

are their axis of rotation fore and aft _____

Earthing, are the bedplates and frames of the generating plant efficiently earthed _____ are the prime movers and

their respective generators in metallic contact _____

Main Switch Boards, where placed _____

_____ 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 _____

are they protected from mechanical injury and damage from water, steam or oil _____, 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, incombustible 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 connected to one pole

insulated from the slab with mica or micanite and the slab similarly insulated from its framework Yes, and is the

frame effectively earthed _____ Are the following fittings as per Rule, viz.:— spacing or shielding of live parts

Yes, accessibility of all parts _____, 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 Double pole

isolating switches and special overload circuit breaker.

Instruments on main switchboard see below, + ammeters see below + voltmeters _____ 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 Pilot lamps, switches

and fuses.

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

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule + One main and one field

ammeters to each main generator, one field ammeter to each main motor and one ammeter for each pair of main motors.

One voltmeter for each main generator.

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.

METROPOLITAN-VICKERS ELECTRICAL
CO. LTD.
Electrical Engineers.
TREASURER.

Date 28.9.28.

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying Amperes feet from standard compass feet from steering compass.

A cable carrying Amperes feet from standard compass feet from steering compass.

A cable carrying Amperes feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

The maximum deviation due to electric currents was found to be degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

Builder's Signature. Date

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 two main propulsion generators)

The four main propulsion motors, the two auxiliary exciting generators, their control switches and switchboard have been built under Special Survey. The materials of the armature spindles and couplings have been tested in accordance with the Specification and were found sound and of good workmanship. The machines proved satisfactory on the full and overload power tests and the commutation tests, the rise in temperature of the different parts at the end of the full load six hour test being in all cases below 40° C above the surrounding temperature. The insulation of the machines was pressure tested to 2000 volts A.C. and also megger tested with satisfactory results. The above electrical machinery and equipment is in my opinion eligible for the notation of + L.M.C. with date when fitted on board the vessel in accordance with the Requirements of this Society, subject to switches and controllers being made watertight if fitted in exposed positions.

Total Capacity of Generators 410 Kilowatts

The amount of Fee ... £ 25 : 12 : 10

Travelling Expenses (if any): £ 22 : 11 : 28

Committee's Minute

Assigned

Surveyor to Lloyd's Register of Shipping.

Spare Gear.

Main Propulsion Generators, Motors

1-armature complete with fan etc.

1-set of shunt coils.

Main Propulsion Generators.

1-set of brushes, line of holders complete.

2-bearing brushes.

1/2-set of armature coils

Main Propulsion Motors.

2-sets of brushes complete with brush holders.

2-bearing brushes.

Auxiliary Exciting Generators.

1-spare armature complete.

1-set of shunt coils.

1- " " Interpole " "

1- " " brushes & holders complete.

2-half bearings.

Dates of Survey during 1928. May 2, 12, 15, 18, 21, 23, 24, 30, 31. June 11, 19, 26. July 17, 20, 25, 26.
progress of works in shops Aug. 2, 23. Sept. 7.

Dates of Examination of principal parts - Armature Spindles, May 23, 30, 31.

Yokes, May 31st. Armatures, June 19th.

Armature Spindles. Material. Mild Steel. Identification mark h^o 1/2 59 Fl.Spindle Couplings " Mild Steel. " " h^o 194, 195 & Fl.

Approved
[Signature]

Description of the Diesel Electric Drive Propelling

Machinery for Yarrow's 1559.

The propelling machinery of this vessel consists of 4 - 200 H.P., 50 volt direct current shunt wound motors having a maximum speed of 350 r.p.m.

The vessel has twin propellers at each end, each propeller being operated by its own motor and line shafting. The motors are situated in the main engine room, two at each end of same, port and starboard.

The motors are supplied with power from two main shunt wound generators, each of 170 kilowatts at 250 volts when running at 350 r.p.m. Each main generator is driven by a M.A.N. Diesel Engine.

Tandem with each main generator is an auxiliary generator of 35 kilowatts at 125 volts. These generators are intended to supply power to the fields of the main generators and motors, and also to the auxiliary machinery and lighting circuits. When the main engines are shut down, power is supplied to the auxiliary bus bars from a petrol-paraffin "Astor" Oil Engine generator set.

The control gear of the installation is such that the engines can be manoeuvred from either one of two wheel houses on deck, one at either end of the vessel, or from the engine room. For either direction of the vessel's motion the corresponding after motors are used. The two forward motors being automatically cut out, thus the four motors cannot be run at the same time. This selection is performed as follows:- On deck and situated between the two wheel houses, there is a 17 pole master switch, housed in a cast iron standard box operated by a special key. The function of this switch is to select the wheel house from which the vessel is to be controlled, and the corresponding driving motors. Having made the selection, the key is able to be removed and carried to the selected wheel house, where it is used to unlock the manoeuvring controller, which resembles a ship's telegraph, and cannot be removed until controller is in off position. Each of the two selected motors is independently controlled.

There is a switch on the main switch board, which can cut out the two deck controls and join up the engine room controller.

It is also arranged by switches on the main switch board that, if only one generator is in commission the two motors in service may be independently operated from the remaining generator set.

The reversing of the motors is carried out by reversing the shunt field of the motors, and is automatically operated by the above mentioned wheel house or engine room controller, whichever is being used.

Approved