

REPORT ON ELECTRIC PROPELLING MACHINERY.

Received at London Office

26 JUN 1945

Date of writing Report 15th May 1945 When handed in at Local Office 4. 6. 1945 Port of Newcastle-on-Tyne
 No. in Survey held at Wallsend Date, First Survey January 3rd 1945 Last Survey May 9th 1945
 Reg. Book. Number of Visits 18

Single
on Twin } Screw vessel "OLNA"
Triple
Quadruple
Built at Wallsend By whom built Swan, Hunter & W.R. Ltd. Yard No. 1689 When built 1945

Tons { Gross 12667
Net 7737

Electrical Machines made at Rugby By whom made B.T.H. Co., Ltd. Contract No. _____
 Generator No. R.197082/3 When made 1945
 Motor No. R.125272

Shaft Horse Power at Full Power 11,000 ? Total capacity of Generators 8400 kilowatts

Nom. Horse Power as per Rule 1833 Owners Admiralty Port belonging to _____

Trade for which Vessel is intended Admiralty Fleet Oil

TEAM ENGINES.—Type of Engine φ No. of Engines φ Revs. per minute φ

Is a Governor fitted φ Is the speed variation as per Rule when load is thrown off φ

Is an emergency Governor fitted φ Is it arranged for hand tripping φ

Does it trip the throttle valve as per Rule φ If exhaust steam is admitted, is an

automatic shut-off fitted φ Is provision made for bleeding steam φ and

is a non-return or positive shut-off valve fitted YES

Torque Limiting.—If generator capacity exceeds motor rating, state means provided for limiting torque input to screw shaft Sumner capacity commensurate with motor rating.

Lubricating Oil.—State what means are provided for emergency supply φ

Is the emergency reserve sufficient to maintain lubrication as per Rule φ

Mechanical Balance.—Are the Engines and Generators balanced so as not to cause appreciable vibration φ

Report.—Has a separate report Rpt. 4a for the Engines been issued φ

ICE ENGINES.—Type of Engines _____ Revs. per minute _____

Is a Governor fitted _____ Is the speed variation as per Rule when load is thrown off _____

Is an Emergency Governor fitted _____ Does it operate as per Rule _____

Rating.—Has each Engine been tested and found to be capable of developing 10 per cent. overload for one hour as per Rule _____

Report.—Has a separate report Rpt. 4b for the Engines been issued _____

GENERATORS.—Direct or Alternating Current φ No. of Generators φ

If alternating current state number of phases φ frequency φ

Kilowatts per Generator φ Voltage per Generator φ Amperes per Generator φ

Do they comply with the requirements regarding insulation materials φ

terminals φ, coolers φ, thermometers φ

lubrication φ, position in ship φ, temperature rise φ

embedded temperature detectors φ shaft currents φ

Ventilation.—State how this is arranged (open or closed system) φ

If open system are ventilating arrangements satisfactory φ

Heating when Idle.—State what provision is made φ

Facilities for Inspection and Repair.—Are these as per Rule φ

Are wear-down gauges supplied φ

Bilges.—Are the arrangements to prevent accumulation of bilge-water under the machines satisfactory φ

Note φ Where indicated thus (φ) information contained in London Rpt. No. 112486

MOTORS.—S.H.P. per Motor at full power ϕ No. of Motors ϕ

Single or double unit ϕ Voltage per Motor ϕ Amperes per Motor ϕ

Do they comply with the requirements regarding insulation materials ϕ

terminals ϕ , coolers ϕ , thermometers ϕ , ventilation ϕ

heating when idle ϕ , shaft currents ϕ , facilities for inspection and repair ϕ

mechanical protection ϕ , lubrication ϕ , position in ship ϕ

A.C. Motors.—Are the laminations securely clamped around the whole of the periphery ϕ

and are they insulated from one another with approved material ϕ

Is provision made for machining the collector rings ϕ

Do the Motors remain in step under all normal conditions of running ϕ

D.C. Motors.—Are the brushes staggered as per Rule ϕ

If the system permits overspeeding at light loads are overspeed protection devices fitted ϕ

EXCITATION.—Is current for excitation taken from the ship's Auxiliary Generators ϕ

If so state voltage ϕ and excitation amperes at full power ϕ kilowatts for excitation ϕ

State arrangements for excitation of Propulsion Generators ϕ

and Propelling Motors ϕ

If an alternative means of excitation is provided, state particulars *Two motor driven booster units also fitted.*

Do the Excitation Machines comply with the requirements regarding temperature rise at full power ϕ

and after manoeuvring as per Rule ϕ

D.C. Systems.—Are the arrangements for Motor and Generator excitation as per Rule ϕ

CONTROL.—Position of Main Control Panel *Forward end of engine room on turbo flat*

Do the Control Panels comply with the requirements regarding position ϕ

distance from combustible material ϕ , grouping of controls ϕ

and instruments ϕ , insulating materials (state what type is used) ϕ

spacing and shielding of live parts ϕ , accessibility of parts ϕ

position of fuses ϕ , proportioning of busbars ϕ

locking of screws and nuts ϕ , labelling ϕ , fuses for voltmeters, etc. ϕ

switches and circuit breakers ϕ , fusible cutouts ϕ

proportioning of levers, connecting links, etc. ϕ , interlocking ϕ

provision for manual operation of contactors, etc. (state method employed) ϕ

earthing of instrument cases above 250 volts to earth ϕ

provision of renewable arcing tips on switches subject to arcing ϕ

capability of withstanding shock and inclination ϕ

operation with high and low voltage ϕ provision for maintaining

alignment of operating shafts ϕ rust proofing of parts ϕ

Overload and Short Circuit Protection.—State what means are provided ϕ

At what current or load is it set to operate *2 amperes* Has it been tested by tripping

by hand when running at full power and found satisfactory ϕ

Earth Detection.—Is the main circuit provided with means for detecting earths ϕ

Are aural and visual alarms fitted ϕ Is main power interrupted by the occurrence of an earth fault ϕ

If a limiting resistance is connected in the earth detecting circuit what is the ohmic value ϕ

What earth leakage current is necessary to operate the device ϕ

Note. Where indicated thus (phi) information contained in London Rpt. No. 112486

If a switch is used to disconnect the aural signal does it automatically switch on the visual alarm ϕ

Are the excitation circuits provided with means for earth detection ϕ

Mechanical Protection.—Are circuits above 250 volts to earth protected as per Rule ϕ

Bridge or Deck Control.—Is bridge control provided ϕ If so, from how many stations ϕ

Can they be operated freely without producing currents or loads in excess of the working capacity of the plant ϕ

and without reference to electrical instruments ϕ Is an emergency control provided in the engine room ϕ

and can the transfer to this control be made quickly in the engine room ϕ

Can the emergency control be rendered mechanically independent of the bridge control ϕ

Instruments and Gauges.—State what Instruments are provided for each Generator ϕ

and for each Motor ϕ

and, for Steam Engines, what Gauges are provided ϕ

Is an Insulation Tester provided ϕ

Discharge Protection.—Are all circuits protected as per Rule ϕ

D.C. Systems.—If the Generators are connected in series state what means are provided to prevent reversal of rotation ϕ

Are the Propulsion Generators also used alternatively for other purposes ϕ

If so, is provision made for overload protection, voltage adjustment, etc., as per Rule ϕ

Reversing Switches.—Are any provided ϕ If so, are they interlocked as per Rule ϕ

Resistances.—Are shunt resistances for synchronous motor fields insulated as per Rule ϕ

Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm ϕ

Auxiliary Power.—Are essential services protected from interruption due to overloading of non-essential circuits ϕ

Generator capacity sufficient to prevent overloading

CONDUCTORS & CABLES.—Are all essential Conductors stranded as per Rule ϕ

Are the ends of Paper and Varnished Cambric Insulated Cables sealed ϕ

Are the ends of all Cables having a sectional area of 0.04 sq. in. and above provided with Cable sockets ϕ

Are all Cables carrying alternating current as per Rule ϕ

Have all Cables been tested at the makers' works as per Rule ϕ

Uninsulated cables approved

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines ϕ

If so, have full particulars been submitted and approved ϕ

Have they been tested under

working conditions and do they give the number of starts required by the Rules ϕ

Are they installed as per Rule ϕ Are the charging arrangements satisfactory ϕ

SPARE GEAR.—If engaged on open sea service has a list of spare gear been submitted and approved *See Surveyor's letter of 17/5/45*

Is a list of the articles supplied attached to this report ϕ

Are they stored as per Rule ϕ

Note. Where indicated thus (phi) information contained in London Rpt. No. 112486

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

| DESCRIPTION—MAIN GENERATORS. | CONDUCTORS. | | TOTAL MAXIMUM CURRENT—AMPERES. | | MAXIMUM VOLTAGE TO EARTH. | INSULATED WITH. | DI. ELECTRIC THICKNESS. | HOW PROTECTED. |
|---------------------------------|--------------------------------------|------------------------|--------------------------------|-------|---------------------------|--------------------|-------------------------|----------------|
| | No. per Pole. | Nominal Area per Pole. | In Circuit. | Rule. | | | | |
| MAIN GENERATORS | 2 | 0.4 | 940 | 24464 | 5180 | V.C. | 0.11 | L.C. |
| GENERATOR FIELDS | 1 | 0.1 | 165 | 191 | 255 | V.C. | 0.055 | L.C. |
| <i>Terminal</i> | 1 | 0.1 | 2 | 191 | 1850 | V.C. | 0.10 | L.C. |
| MAIN MOTORS | 2 | 0.4 | 940 | 24464 | 5180 | V.C. | 0.11 | L.C. |
| MOTOR FIELDS | 1 | 0.1 | 182 | 191 | 2000 | V.C. | 0.10 | L.C. |
| CONTROL CIRCUITS | <i>All cables inside engine room</i> | | | | | | | |
| OTHER CIRCUITS:— | | | | | | | | |
| <i>Propulsion Motor Fans</i> | 1 | 0.0225 | 60 | 75 | 220 | V.C. | 0.035 | L.C. |
| <i>Lubricating Oil Pumps</i> | 1 | 0.0145 | 50 | 57 | 220 | V.C. | 0.035 | L.C. |
| <i>Running Gear Motor</i> | 1 | 0.03 | 81 | 87 | 110 | V.C. | 0.035 | L.C. |
| <i>Aux. Circuits. Emergency</i> | 2 | <i>4 1/2</i> | 2500 | — | 220 | <i>Bare Copper</i> | | |
| <i>Aux. Circuits. Emergency</i> | 1 | <i>4 1/2</i> | — | — | 220 | <i>Bare Copper</i> | | |
| <i>Emergency Stop Switch</i> | 1 | 0.0045 | 2 | 15 | 220 | V.C. | 0.035 | L.C. |

All Conductors are of annealed copper, conforming to International Electrotechnical Commission Publication No. 28.

The Insulated Conductors have withstood the dielectric tests specified in the Rules.

The foregoing is a correct description,

THE BRITISH THOMSON-HOUSTON CO., LTD.

per H. L. Lanning

Electrical Engineers.

Date *31st May 1945*

COMPASSES.—Are Single-Conductor circuits carrying continuous current arranged with lead and return Conductors fitted as close to one another as possible

Yes

Have tests been made during adjustment of the Compasses to determine the effect of switching the main circuits on and off *Yes*

The maximum deviation due to electric currents was found to be *Nil* degrees on *every* course in the case of the

Standard Compass and *Nil* degrees on *every* course in the case of the Steering Compass.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

W. Buckin

Builders' Signature.

Date *25th May 1945.*

per H. L. Lanning
Chief Draughtsman.

| | | | | |
|--|---------------------|---------------------------------------|-----------|---|
| Dates of Survey while building | { | During progress of work in shops - | { | <i>1945 Jan 3, 24 Feb. 6, 9, 20, 28 Mar. 7, 12, 20, 26, 28 Apr. 4, 19, 24, 26 May 1, 7, 9</i> |
| | | During erection on board vessel - | | |
| | Total No. of visits | | <i>18</i> | |

Is this machinery duplicate of a previous case *No* If so, state name of vessel _____

General Remarks (State quality of workmanship, opinions as to class, &c. *The electric propelling machinery*)

has been installed under special survey in accordance with the approved plans, the Surveyor's letters and the requirements of the Rules. The materials used and the workmanship are good. The machinery was tried under working conditions at sea and found satisfactory and eligible in my opinion for the notations recommended in Rpt. 4 a.

The amount of Entry Fee ... £

Travelling Expenses (if any) £

When applied for,

19

When received,

19

S. L. Lanning

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 6 JUL 1945

Assigned

Su F.E. Mackay, rpt.



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Foundation