

GENERATING

Bel. 14265

Report on Steam Turbine Machinery.

No. 114143

Writing Report 15 Aug 1946 When handed in at Local Office 22 AUG 1946 Port of London Received at London Office 22 AUG 1946

Survey held at Bedford Date, First Survey 17 MAY 1946 Last Survey 13 August 1946

Name of Vessel BALAENA (Number of Visits NINE)

Where made at Belfast By whom built Harland & Wolff Ltd Yard No. 1327 When built 1946

Where made at Bedford By whom made W.A. Allen Sons & Co Ltd Engine No. 7156610 When made 1946

Horse Power at Full Power 2150 Owners: Mum United Whalers Ltd Port belonging to

Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

For which Vessel is intended

TURBINE ENGINES, &c.—Description of Engines Back Pressure Turbines

Turbines One Direct coupled, single reduction geared to Dynamo propelling shafts. No. of primary pinions to each set of reduction gearing one

Coupled to Alternating Current Generator phase periods per second Direct Current Generator rated 1500 Kilowatts 220 Volts at 550 revolutions per minute;

Driving power for driving Dynamo Propelling Motors, Type Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

Table with columns for H.P., I.P., L.P., and ASTERN. Rows include HEIGHT OF BLADES, DIAMETER AT TIP, and NO. OF ROWS.

Horse Power at each turbine H.P. 2150 I.P. 5000 L.P. 5500 Revolutions per minute, at full power, of each Turbine Shaft

Shaft diameter at journals H.P. 3 3/4" I.P. 6.3629" L.P. 5.76406" Width of Face 1st reduction wheel 22 10"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 8" 1st reduction wheel 11" 9 1/2"

Pinion diameter 1st 4 1/2" 2nd 9" Pinion Shafts, diameter at bearings External 1st 4 1/2" 2nd 9"

Shafts, diameter at bearings main 8 9 10" diameter at wheel shroud, 1st 57.8306 Generator Shaft, diameter at bearings 9"

Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted

Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted Is the tube screw shaft fitted with a continuous liner

Liners, thickness in way of bushes as per rule as fitted Thickness between bushes as per rule as fitted Is the after end of the liner made watertight in the stern boss

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If liners are fitted, is the shaft lapped or protected between the liners. Is an approved Oil Gland or other appliance fitted at the after end of the tube

If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet

Are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbines exhaust direct to the sea

No. of Turbines fitted with astern wheels Feed Pumps No. and size How driven

Are they connected to the Main Bilge Line No. and size How driven Lubricating Oil Pumps, including Spare Pump, No. and size

Are independent means arranged for circulating water through the Oil Cooler Suctions, connected both to Main Bilge Pumps and Auxiliary Pumps

No. and size:—In Engine and Boiler Room In Pump Room

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BOILERS, &c.—(Letter for record ) Total Heating Surface of Boilers

Is Forced Draft fitted  No. and Description of Boilers  Working Pressure

Is a Report on Main Boilers now forwarded?

Is  a Donkey  Boiler fitted?  If so, is a report now forwarded?

an Auxiliary

Is the donkey boiler intended to be used for domestic purposes only

Plans. Are approved plans forwarded herewith for Shafting  Main Boilers  Auxiliary Boilers  Donkey Boilers

(If not, state date of approval)

Superheaters  General Pumping Arrangements  Oil Fuel Burning Arrangements

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied. *One turbine rotor completely bladed; one set of bearings; one set of springs; one set of governor parts; one set of glands; one central valve; spindle & seats; one worm & wheel; one set of oil pump wheels; one armature complete; one set of field coils; one set of brushes & holders; one armature shaft and bearings.*

The foregoing is a correct description, *For W. Hallen, Glasgow* Manufacturer.

Dates of Survey while building

|                                      |  |
|--------------------------------------|--|
| During progress of work in shops - - | 1946. May: 17. 21. 24. 28. 31. June 3. 14. July 19. Aug. 13. |
| During erection on board vessel - -  |  |
| Total No. of visits                  | 9.   |

Dates of Examination of principal parts—Casings  Rotors *31/5/46* Blading *3.6.46* Gearing *14.6.46*

Wheel shaft  Thrust shaft  Intermediate shafts  Tube shaft  Screw shaft

Propeller  Stern tube  Engine and boiler seatings  Engine holding down bolts

Completion of fitting sea connections  Completion of pumping arrangements  Boilers fixed  Engines tried under steam

Main boiler safety valves adjusted  Thickness of adjusting washers *4.2.46 3792 98782A2*

Rotor shaft, Material and tensile strength *Steel* Identification Mark *87728. 440708 B.E.B.*

Flexible Pinion Shaft, Material and tensile strength  Identification Mark *46840708 F.S.*

Pinion shaft, Material and tensile strength *Steel* Identification Mark *4427. 29.12.45.*

1st Reduction Wheel Shaft, Material and tensile strength  Identification Mark *763440708 F.S. 14.6.46 RW*

Wheel shaft, Material *Steel* Identification Mark *4391/4.12.45* Thrust shaft, Material  Identification Mark

Intermediate shafts, Material  Identification Marks  Tube shaft, Material  Identification Marks

Screw shaft, Material  Identification Marks  Steam Pipes, Material  Test pressure

Date of test *19.7.46* Is an installation fitted for burning oil fuel

Is the flash point of the oil to be used over 150°F  Have the requirements of the Rules for the use of oil as fuel been complied with

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo  If so, have the requirements of the Rules been complied with

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with

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

General Remarks. (State quality of workmanship, opinions as to class, &c.) *The turbine set has been constructed under special survey, in accordance with the requirements of the Rule. The steel was made at Works approved by the Committee; the workmanship is good & upon completion the generator set was tested upon the bench under full & overload conditions with satisfactory results.*

*The generator has been despatched to Belfast for fitting on board the vessel. This turbo-generator has been efficiently installed on board the vessel.*

|                              |   |    |          |                  |
|------------------------------|---|----|----------|------------------|
| The amount of Entry Fee      | £ | :  | :        | When applied for |
| Special                      | £ | 53 | - 14 - 0 | 22 AUG 1946      |
| Donkey Boiler Fee            | £ | :  | :        | When received.   |
| Travelling Expenses (if any) | £ | 1  | 13       | 19               |

*For R.W. Coomber & self J.H. Earnett*  
Engineer Surveyor to Lloyd's Register of Shipping.

Certificate (if required) to be sent to Committee's Minute.

Committee's Minute *FRI. 22 NOV 1946*

Assigned *Sir F.F. Meehan, opt.*

