

REPORT ON MACHINERY

No. 20236

Received at London Office THE 11 OCT 1921

Date of writing Report 10 Oct 1921 When handed in at Local Office 10

Port of NEWPORT, MON.

No. in Survey held at Reg. Book.

Date, First Survey 26 7 21

Last Survey 6 Aug 1921

(Number of Visits 7)

Gross 6261

Net

Master

Built at

Chepstow

By whom built

Monmouth S.S. Co

When built 1921

Engines made at

Manchester

By whom made

Metropolitan -ickers E. Co. Ltd.

when made 1920

Boilers made at

Barnsley

By whom made

Babcock & Wilcox

when made 1918

Registered Horse Power 678

Owners Comendia Santa Anorima

Port belonging to Girona

Shaft Horse Power at Full Power 2300

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines

Ratrow turbine & 8th Gear

No. of Turbines 2

Diameter of Rotor Shaft Journals, H.P. $4\frac{1}{2}$ " L.P. $4\frac{1}{2}$ " Diameter of Pinion Shaft $1\frac{1}{2}$ " $4\frac{1}{2}$ " $2\frac{1}{2}$ " $9\frac{1}{2}$ "
 Diameter of Journals $1\frac{1}{2}$ " $2\frac{1}{2}$ " $9\frac{1}{2}$ " Distance between Centres of Bearings $1\frac{1}{2}$ " $2\frac{1}{2}$ " $4\frac{1}{2}$ " Diameter of Pitch Circle $1\frac{1}{2}$ " $6\frac{1}{2}$ " $2\frac{1}{2}$ " $13\frac{1}{2}$ "
 Diameter of Wheel Shaft $1\frac{1}{2}$ " $2\frac{1}{2}$ " $14\frac{1}{2}$ " Distance between Centres of Bearings $1\frac{1}{2}$ " $2\frac{1}{2}$ " $4\frac{1}{2}$ " Diameter of Pitch Circle of Wheel $1\frac{1}{2}$ " $4\frac{1}{2}$ " $2\frac{1}{2}$ " $76\frac{1}{2}$ "
 Width of Face $1\frac{1}{2}$ " $18\frac{1}{2}$ " $3\frac{1}{2}$ " Diameter of Thrust Shaft under Collars $15\frac{1}{2}$ " $14\frac{1}{2}$ " Rule Diameter of Tunnel Shaft as per rule $13\frac{1}{2}$ "
 No. of Screw Shafts 1 CL Diameter of same as per rule $1\frac{1}{2}$ " $3\frac{1}{2}$ " as fitted $1\frac{1}{2}$ " $3\frac{1}{2}$ " Diameter of Propeller $17\frac{1}{2}$ " Pitch of Propeller $16\frac{1}{2}$ "
 No. of Blades 4 State whether Moveable No Total Surface $100\frac{1}{2}$ Diameter of Rotor Drum, H.P. \checkmark L.P. \checkmark Astern \checkmark
 Thickness at Bottom of Groove, H.P. \checkmark L.P. \checkmark Astern \checkmark Revs. per Minute at Full Power, Turbine 3500 Propeller 78.

PARTICULARS OF BLADING.

| WHEEL | H.P. | | | L.P. | | | ASTERN. | | |
|-------|-------------------|---|--------------|-------------------|------------------|--------------|-------------------|------------------|--------------|
| | HEIGHT OF BLADES. | DIAMETER AT TIP. | NO. OF ROWS. | HEIGHT OF BLADES. | DIAMETER AT TIP. | NO. OF ROWS. | HEIGHT OF BLADES. | DIAMETER AT TIP. | NO. OF ROWS. |
| 1ST | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " \pm $3\frac{3}{4}$ " | 2 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |
| 2ND | $\frac{1}{2}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |
| 3RD | $\frac{1}{2}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |
| 4TH | $\frac{1}{2}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |
| 5TH | $\frac{1}{2}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |
| 6TH | $\frac{1}{2}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |
| 7TH | $\frac{1}{2}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |
| 8TH | $\frac{1}{2}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 | $1\frac{1}{8}$ " | $3\frac{1}{2}$ " | 1 |

No. and size of Feed pumps Two $1\frac{1}{2}$ " dia steam 8" dia water & 7" stroke
 No. and size of Bilge pumps One $1\frac{1}{2}$ " dia steam 10" dia water 14" dia water & 7" stroke. One Gun. Service 7" dia steam 8" dia water 7" x 12" S.
 No. and size of Bilge suction in Engine Room Four $3\frac{1}{2}$ " : One independent 8"

In Holds, &c. No 1 Hold $1\frac{1}{2}$ " No 2 $2\frac{1}{2}$ " Brown Bunker $2\frac{1}{2}$ "
 1: $3\frac{1}{2}$ " Catic, Deep tank $1\frac{1}{2}$ " No 3 $3\frac{1}{2}$ " No 4 $1\frac{1}{2}$ " $2\frac{1}{2}$ " Tunnel $2\frac{1}{2}$ " $1\frac{1}{2}$ " in well.
 No. of Bilge Injections One sizes 14" Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size 8"
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes
 Are all connections with the sea direct on the skin of the ship No Are they Valves or Cocks Both
 Are they fired sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Below
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes
 What pipes are carried through the bunkers Bilge & for peak suction How are they protected Steel Cans
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from at head of upper deck

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

Barnsley & Sons Steel Co of Scotland Stewart & Luggs

Total Heating Surface of Boilers 9636 Is Forced Draft fitted F.D. No. and Description of Boilers 3 Babcock & Wilcox's Marine

Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 10/3/21 No. of Certificate 20

Can each boiler be worked separately Yes Area of fire grate in each boiler $83\frac{3}{4}$ ft² No. and Description of Safety Valves toeach boiler 2 Spring loaded Area of each valve $3\frac{1}{2}$ " Pressure to which they are adjusted 250 lbs. Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 6.0 Mean dia. of boilers 4.0 Length 15' $1\frac{1}{2}$ " Material of shell plates SThickness $9\frac{1}{16}$ " $1\frac{1}{16}$ " Range of tensile strength 28/32 Are the shell plates welded or flanged Descrip. of riveting: cir. seams S.R.long. seams T.R. & S.B.S Diameter of rivet holes in long. seams $2\frac{3}{8}$ " Pitch of rivets 3.53 Lap of plates or width of butt straps $7\frac{1}{4}$ "

rivets 76.7 Working pressure of shell by rules 238 Size of manhole in shell 15" x 11"

Per centages of strength of longitudinal joint plates 74.4 No. and Description of Furnaces in each Boiler Material Outside diameter

Size of compensating ring $7\frac{1}{8}$ " x $4\frac{1}{8}$ " No. and Description of Furnaces in each Boiler Material Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

bottom Thickness of plates bottom

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Pitch of stays to diltor: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space

Material S Thickness $\frac{1}{8}$ " Pitch of stays How are stays secured Staked Working pressure by rules 240 lbs. Material of stays

Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Thickness Material of back plate S Thickness $\frac{1}{2}$ " Greatest pitch of stays Working pressure of plate by rulesDiameter of tubes $1\frac{1}{2}$ " $3\frac{1}{2}$ " Pitch of tubes $2\frac{1}{2}$ " $2\frac{1}{2}$ " Material of tube plates S Thickness: Front $1\frac{1}{8}$ " Back Mean pitch of stays

Pitch across wide water space Working pressures by rules Girders to Chamber tops: Material Depth and

thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules Steam dome: description of joint to shell No. of strength of joint Diameter

Thickness of shell plates $3\frac{1}{4}$ " Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets

Working pressure of shell by rules Crown plates: Thickness How stayed

SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____
Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____
Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? _____

SPARE GEAR. State the articles supplied:— 1 Propeller. Two bushes for turbine spindles. Four diaphragm packing rings. Hand casing for spindles. One thrust shaft bearing. Two bearing bushes for slow speed wheel shaft. Two bearing bushes for high speed pinion shaft. White metal for bushes for bearing pin bearing gear & spur gear &c in accordance with Rules and as per Specification

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops - -
During erection on board vessel - -
Total No. of visits

Feb 7th March 4th 10th May 11 June 17th July 21 Aug 6th 1921

Is the approved plan of main boiler forwarded herewith ☒

Dates of Examination of principal parts—Casings 5 Feb 1918 Rotors 24 Dec 1918 Blading 3 Sept 1918 Gearing March 1920
Rotor shaft 14 Dec 1918 Thrust shaft 5.2.20 Tunnel shafts 29/1 + 10/3/19 Screw shaft 16.1.19 Propeller 4 March 1921
Stern tube _____ Steam pipes tested 4.10.1921 Engine and boiler seatings 7 Feb 1921 Engines holding down bolts 4 March 1921
Completion of pumping arrangements 7 Feb 1921 Boilers fixed 4 March 1921 Engines tried under steam 21st July 1921
Main boiler safety valves adjusted 21 July 1921 Thickness of adjusting washers Port boiler P₁₂ 5 7/16 Centre P₁₄ 5 7/16 H₁₂ 5 3/4 P₃₂
Material and tensile strength of Rotor shaft Ingot Steel 33.7 tons & 32.7 tons Identification Mark on Do. U 476 + U 492
Material and tensile strength of Pinion shaft Mild Carbon Steel 55.88 tons & 64.6 tons Identification Mark on Do. 5320 + 5287
Material of Wheel shaft Mild Steel Identification Mark on Do. 324 R Material of Thrust shaft M S Identification Mark on Do. No 155-1
Material of Tunnel shafts M S Identification Marks on Do. J T Material of Screw shafts M S Identification Marks on Do. No 3722
Material of Steam Pipes M S. S. D. Heads, others L P Test pressure 600 lbs

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 Section 49 of the Rules been complied with ☒

Is this machinery a duplicate of a previous case No

If so, state name of vessel 'War Epic' War Shipping

General Remarks (State quality of workmanship, opinions as to class, &c.

The boilers (made by James Balcock & Wilson Ltd. See. Gls Rpt No 38464 & Machinery made by the Metropolitan Works Co. See Manchester Rpt No 4731.) of this vessel have been securely fitted on board. Boilers tested to 400 lbs for water pressure & found in order. Examined under steam & safety valves adjusted. The Machinery tried under ^{steam} found satisfactory. On trial trip the Machinery was found to work in a satisfactory manner. & vessel is now eligible to Record of ~~X~~ LMC 8.21 subject to water tight fittings being examined annually.

The amount of Entry Fee ... £ 6 When applied for, _____

Special ... £ 108 : 18 When received, _____

Donkey Boiler Fee ... £ 43 : 11 : 2

Travelling Expenses (if any) £ 43 : 11 : 2

Committee's Minute

TUE. 13 OCT. 1921

Assigned

+ L.M.C. 8.21.F.D. C.L.

MACHINERY CERT.
WRITTEN.

John P. Anderson
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation