

REPORT ON MACHINERY.

No. 4046-8
11th SEP. 30 1920

Received at London Office

Date of writing Report 24.9.20 When handed in at Local Office 28.9.20 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 3.6.1919 Last Survey 17.9.20
 Reg. Book. S.S. "MANIPUR" (Number of Visits 56)
 on the
 Master J. H. Lunn Built at Glasgow By whom built Lithgows Ltd (no 729) When built 1920
 Engines made at Manchester By whom made Inchoff & Co (no 1727) when made 1920
 Double reduction gear made by R. & W. Gray (no 1727) when made 1920
 Boilers made at Glasgow By whom made R. & W. Gray (no 713) when made 1920
 Machinery installed at Glasgow by R. & W. Gray (no 713) when made 1920
 Registered Horse Power 5000 Owners J. & W. Brackleybank Ltd Port belonging to Liverpool
 Shaft Horse Power at Full Power 5000 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 Rule H.P. 1113

TURBINE ENGINES, &c. Description of Engines Rateau Impulse H.P. & L.P. No. of Turbines 2
 with double reduction gear
 Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 4 1/2" Diameter of Pinion Shaft 1st Red 6" 2nd 13"
 Diameter of Journals 6 1/2" Distance between Centres of Bearings 3-1 1/2"-8" Diameter of Pitch Circle 1st Red 8' 4" 2nd 20' 12"
 Diameter of Wheel Shaft 17 1/2" Distance between Centres of Bearings 6-3" Diameter of Pitch Circle of Wheel 99' 87"
 Width of Face 36" Diameter of Thrust Shaft under Collars 17 1/2" Diameter of Tunnel Shaft as per rule 16' 35" as fitted 16' 3"
 No. of Screw Shafts 1 Diameter of same as per rule 17 1/2" as fitted 18 1/2" Diameter of Propeller 18-6" Pitch of Propeller 18' 0"
 No. of Blades 4 State whether Moveable yes Total Surface 116 sq ft Diameter of Rotor Drum, H.P. - L.P. - Astern -
 Thickness at Bottom of Groove, H.P. - L.P. - Astern - Revs. per Minute at Full Power, Turbine 3000 Propeller 80

PARTICULARS OF BLADING.

	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-EXPANSION	15' 2 1/8"	3-2 1/2"-3-4"	2	3 1/8"	3-5 1/8"	1	2' 3"	3-3 1/2"-3-4"	2
2ND	1 1/8"	3-3 1/8"	1	3 1/8"	3-5 1/8"	1			
3RD	1 1/8"	3-3 1/8"	1	4 3/8"	3-6 3/8"	1			
4TH	1 3/8"	3-3 3/8"	1	5 1/2"	3-7 1/2"	1			
5TH	2 1/8"	3-4 1/8"	1	6 3/8"	3-8 3/8"	1			
6TH				8 1/4"	3-10 1/4"	1			
7TH				10 7/8"	4-10 7/8"	1			
8TH									

No. and size of Feed pumps (2 main) 14" x 10 1/2" x 24" (1 aux) 10 1/2" x 8" x 21"
 No. and size of Bilge pumps (1) 7" x 8" x 18" (1) 10" x 8" x 18" (1) Ballast 10 1/2" x 12" x 24" Lubricating oil (1) 6 1/2" x 8" x 18" (1) spare 6 1/2" x 8" x 18"
 No. and size of Bilge suction in Engine Room (2) 3 1/2" 8" Kholu (2) 3 1/2"
 In Holds, &c. nos 1-2-3-4-5-6-7 (2) 3 1/2" Tunnel well (1) 3 1/2"

No. of Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine Room & size 3 1/2"
 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 yes Are they Valves or Cocks Both yes
 Are they fixed 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 none How are they protected
 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 upper deck

BOILERS, &c. (Letter for record) ALL Manufacturers of Steel W. & A. R. & Co. Ltd. Glasgow
 Total Heating Surface of Boilers 19266 sq ft Forced Draft fitted no No. and Description of Boilers 2 S.B. & 2 A.B.
 Working Pressure 200 lb Tested by hydraulic pressure to 350 lb Date of test 1-4-20 No. of Certificate 15218
 Can each boiler be worked separately yes Area of fire grate in each boiler DE 1400 SE 700 No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve DE 12 3/4" Pressure to which they are adjusted 205 Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1-6" Inside Mean dia. of boilers 17-6" Length 19-6" Material of shell plates Steel
 Thickness 1 1/8" Range of tensile strength 30634 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams do Lap
 long. seams TR DBS Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/4" Lap of plates or width of butt straps 22 1/4"
 Per centages of strength of longitudinal joint rivets 88.2 Working pressure of shell by rules 200 Size of manhole in shell 19 1/2" x 15 1/2"
 Size of compensating ring 3-0 1/2" x 2-8 1/2" No. and Description of Furnaces in each Boiler DE 8 SE 4 Corrugated Material Steel Outside diameter 3-10 1/4"
 Length of plain part top 5" crown 8" bottom 8" Description of longitudinal joint weld No. of strengthening rings -
 Working pressure of furnace by the rules 217 Combustion chamber plates: Material Steel Thickness: Sides 23" Back 23" Top 23" Bottom 16"
 Pitch of stays to ditto: Sides 9 3/4" x 9 3/8" Back 9 3/4" x 9 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 200
 Material of stays Iron Diameter at smallest part 2.39" Area supported by each stay 89 Working pressure by rules 202 End plates in steam space
 Material Steel Thickness 1 3/8" Pitch of stays 18 1/2" x 18" How are stays secured 202 Working pressure by rules 200 Material of stays Steel
 Diameter at smallest part 7.06 Area supported by each stay 341 Working pressure by rules 210 Material of Front plates at bottom Steel
 Thickness 3" Material of Lower back plate Thickness - Greatest pitch of stays - Working pressure of plate by rules -
 Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 1/8" Material of tube plates Steel Thickness: Front 1 1/2" Back 1" Mean pitch of stays 10 1/2"
 Pitch across wide water spaces 13 3/8" Working pressures by rules 210 Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 13" x 1" (2) Length as per rule 50" Distance apart 9 3/4" Number and pitch of stays in each (4) 9 3/8"
 Working pressure by rules 205 Steam dome: description of joint to shell none % of strength of joint Diameter
 Thickness of shell plates 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 *none*

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 Raising Gear fitted

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:—

2 Bolts & nuts for main gear bearing 2 bolts & nuts for main bearing 1 set coupling bolt
1 set bearings for 2nd red shaft 2 thrust shoes 1 set fuel pump valves 1 set bilge pump valves 1 set valves for lubricating oil
1 bucket & rod for lubricating oil pump 1 escape valve spring for each size 1 shuttle valve for air pump 1 piston rod
1 piston bucket & rod for fuel pump 1 impeller shaft crank shaft
1 piston rod and connecting rod and bushes for circulating pump a quantity of assorted
bolts and nuts bars and plates of steel and other articles

The foregoing is a correct description

Dand Kowambo Ltd

Manufacturer.

Dates of Survey while building

During progress of work in shops ---
During erection on board vessel ---
Total No. of visits

1919: Jun 3. 18 July 14 Aug 27 29 Sep 10 25 Oct 19 15. 16 Nov 3. 5 Dec 1. 24 (1920) Jan 12 15. 20 Feb 17 10. 12 21. 27 Mar 14 25 Apr 1. 2. 15. 17. 23. 28 May 14 5. 13. 17. 26 27 31 Jun 1. 3. 7. 21 July 2. 8
1920: July 12 13. 14 Aug 11. 30. 31 Sep 17

Is the approved plan of main boiler forwarded herewith

yes

" " " donkey " " " "

Dates of Examination of principal parts—Casing

Rotors

Blading

Gearing

Rotor shaft

Thrust shaft

Tunnel shafts

Screw shaft

Propeller

Stern tube

Steam pipes tested

Engine and boiler seatings

Engines holding down bolts

Completion of pumping arrangements

Boilers fired

Engines tried under steam

Main boiler safety valves adjusted

Thickness of adjusting washers

Identification Mark on Do.

Material and tensile strength of Rotor shaft

Material and tensile strength of Pinion shaft

Material of Wheel shaft

Identification Mark on Do.

Material of Thrust shaft

Identification Mark on Do.

Material of Tunnel shafts

Identification Marks on Do.

Material of Screw shafts

Identification Marks on Do.

Material of Steam Pipes

Iron

Test pressure

600 lb

Is an installation fitted for burning oil fuel

yes

Is the flash point of the oil to be used over 150°F.

yes

Have the requirements of Section 49 of the Rules been complied with

yes

Is this machinery a duplicate of a previous case

yes

If so, state name of vessel

SS Mangalore

General Remarks

(State quality of workmanship, opinions as to class, etc.)

* H.P. Pinion Shaft

H.P. 713 9B. 369 37. L.P. Pinion Shaft

L.P. 713 268. A 589. H.P. 2nd Shaft

T 891 J.P. L.P. 2nd Shaft

Δ: L 7191 1135 TM 11.3.20

L 7186 TM 11.3.20

L 7187 TM 11.3.20

L 7554 TM 11.3.20

L 1671 TM 11.3.20

L 7190 TM 11.3.20

L 1072 TM 11.3.20

The machinery and boilers of this vessel have been constructed under special survey in accordance with the Rules and approved plans the materials and workmanship are good, the machinery has been tried under working conditions and found to work satisfactorily and is eligible in our opinion to be classed with records of + L.M.C. and fitted for oil fuel 9.20 F.P. above 150°F

The amount of Entry Fee

£ 3 : 0 :

When applied for,

29.9.20.

Special

Balance of £ 12.12.9

Donkey Boiler Fee

£ :

Charged at Mch

Travelling Expenses (if any)

£ :

When received,

1/10/20

Committee's Minute

Assigned

+ L.M.C 9.20.

Fitted for oil fuel 9.20. F.P. above 150°F.

Machinery Cert.

WRITTEN 30.9.20

GLASGOW

29 SEP 1920

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