

REPORT ON MACHINERY

No.

Received at London Office

Date of writing Report 25th Dec 1914 When handed in at Local Office

10 Port of Glasgow

Survey held at Glasgow

Date, First Survey 18th June 1915 Last Survey 20th Dec. 1914

Reg. Book.

183 on the

S.S. MAIZAR

(Number of Visits 66)

Tons } Gross
Net

Built at Glasgow By whom built Connell & Co Ltd, No 369 When built 1914

Engines made at Glasgow By whom made D. Rowan & Co, No 635 when made 1914

Boilers made at Glasgow By whom made D. Rowan & Co No 635 when made 1914

Registered Horse Power 783 Owners S. & J. Brocklebank Ltd Port belonging to Liverpool

Shaft Horse Power at Full Power 3200 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

PARSONS ENGINE, &c.—Description of Engines Parsons Reared Turbines No. of Turbines 2

Diameter of Rotor Shaft Journals, H.P. 6 1/2" L.P. 6 1/2" Diameter of Pinion Shaft 4.58 at bottom of teeth

Diameter of Journals 6 1/2" Distance between Centres of Bearings 2' 10 1/2" Diameter of Pitch Circle —

Diameter of Wheel Shaft 16" Distance between Centres of Bearings 6' 4" Diameter of Pitch Circle of Wheel —

Width of Face — Diameter of Thrust Shaft under Collars 15 1/2" Diameter of Tunnel Shaft as per rule 14.09 as fitted 14 1/4" 15 1/4" 15 1/2"

No. of Screw Shafts 1 Diameter of same as per rule 15.356 as fitted 17 1/2" Diameter of Propeller 18' 0" Pitch of Propeller 16' 6"

No. of Blades 4 State whether Moveable yes Total Surface 1048 Diameter of Rotor Drum, H.P. 22' 15" L.P. 42' Astern 33'

Thickness at Bottom of Groove, H.P. Solid L.P. 1 3/4" Astern 1 3/4" Revs. per Minute at Full Power, Turbine 1350 Propeller 82

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. |
| EXPANSION | | | | | | | | | |
| 1st | In this instance particulars could not be obtained | | | | | | | | |
| 2nd | | | | | | | | | |
| 3rd | | | | | | | | | |
| 4th | | | | | | | | | |
| 5th | | | | | | | | | |
| 6th | | | | | | | | | |

No. and size of Feed pumps 2 12" x 9" x 26" 1 surly feed 9 1/2" x 7" x 24"

No. and size of Bilge pumps 1 4" x 8" x 12" also 3 donkey engines 10" x 8" x 15" 4" x 5" x 8" 10 1/2" x 12" x 18"

No. and size of Bilge suction in Engine Room 4 (3 1/2")

In Holds, &c. two in each hold (3 1/2") one in

No. of Bilge Injection 1 sizes 8" Connected to condenser, or to circulating 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

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 Above & 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

That pipes are carried through the bunkers and Bilge & Ballast Suctions How are they protected Wood casing

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 Top Platform

43 BOILERS, &c.—(Letter for record S) Manufacturers of Steel William Beardmore & Co Ltd

Total Heating Surface of Boilers 9266 Is Forced Draft fitted no No. and Description of Boilers Two Double ended main

Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 15-10-14 No. of Certificate 13943

Can each boiler be worked separately yes Area of fire grate in each boiler 1108 No. and Description of Safety Valves to

each boiler 1 pair direct spring Area of each valve 9.62" Pressure to which they are adjusted 205 lbs No. of strengthening rings

Smallest distance between boilers or uptakes and bunkers or woodwork about 18" Mean dia. of boilers 15' 6" Length 18' 6" Material of shell plates Steel

Thickness 1 1/16" + 1 1/32" Range of tensile strength 28.5 to 32 Tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams T.R. & D.R. Lap

Long. seams TRDBS Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 10 1/4" Lap of plates or width of butt straps 21 5/16"

Percentages of strength of longitudinal joint rivets 82.2 % Working pressure of shell by rules 200 Size of manhole in shell 12 x 16

Size of compensating ring 32" x 36" No. and Description of Furnaces in each Boiler 6 Morrison Material Steel Outside diameter 48 9/32"

Length of plain part top Thickness of plates crown 4 1/4" Description of longitudinal joint welded No. of strengthening rings

bottom 6 1/4" Working pressure of furnace by the rules 214 Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 9 1/2" x 8" Back 9 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 202

Material of stays Steel Area supported by each stay 474" Working pressure by rules 242 End plates in steam space

Material Steel Thickness 1 1/16" Pitch of stays 2 1/2" x 2 1/2" How are stays secured nuts Working pressure by rules 205 Material of stays Steel

Area at smallest part 961" x 819" Area supported by each stay 474" Working pressure by rules 200 Material of Front plates at bottom Steel

Thickness 1 1/16" 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 1/16" Back 3/32" Mean pitch of stays 10 1/2"

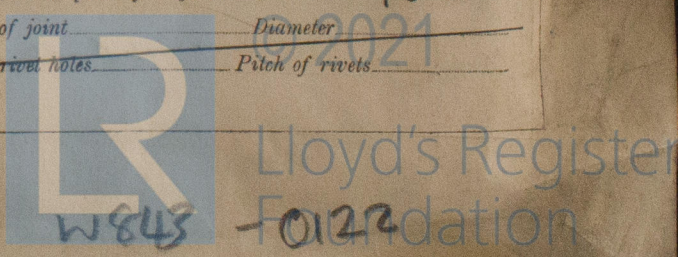
Pitch across wide water spaces 13 3/4" Working pressures by rules 200 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 12" x 1" Double Length as per rule 49 1/16" Distance apart 8 1/2" Number and pitch of stays in each 4 at 9 1/2"

Working pressure by rules 206 Steam dome: description of joint to shell no % 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



WEB FRAMES. EATER. Date of Approval of Plan. Tested by Hydraulic Pressure to
FRAMES, In Fore Body, No. of Test. Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
No. of Side Str. 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: *See list appended*

The foregoing is a correct description,
for David Cowan Manufacturer.

Dates of Survey while building: During progress of work in shops - *1915 June 18, Dec 3, 1916 Jan 21, Apr 10, May 16, June 19, July 12, Aug 2, Sep 11, 12, 18, 20, 21, Oct 24, Nov 1, 10, 13, 1917 Feb 15, 2*
During erection on board vessel - *Jan 8, 28, Apr 19, May 3, 4, 9, 15, 22, 28, 29, 31, June 8, 11, 21, 18, 19, 20, 21, 22, 25, July 3, 23, 26, 27, Aug 13, 16, 20, Sep 5, 12, 14, 26, 28, 30*
Total No. of visits *8, 13, 39, 101, 11, 21, 28, 30, Dec 6, 11, 20. - 66* Is the approved plan of main boiler forwarded herewith *yes*
" " " donkey " " " *yes*

Dates of Examination of principal parts - Casings *24-10-16* Rotors *15-5-14* Blading *8-6-14* Gearing *20-6-14*
Rotor shaft *13-11-16* Thrust shaft *14-6-14* Tunnel shafts *16-8-14* Screw shaft *28-2-14* Propeller *28-2-14*
Stern tube *15-2-14* Steam pipes tested *30-11-14* Engine and boiler seatings *14-6-14* Engines holding down bolts *21-11-14*
Completion of pumping arrangements *6-12-14* Boilers fixed *21-11-14* Engines tried under steam *20-12-14*
Main boiler safety valves adjusted *11-12-14* Thickness of adjusting washers *P 1/2" S 5/16" P 1/2" S 3/8" P 1/2" S 3/8" P 1/2" S 3/8"*
Material and tensile strength of Rotor shaft *Steel: 36 tons 28.6% along* Identification Mark on Do. *4174 WMC 28-6-14 1154 WMC 25-2-14*
Material and tensile strength of Pinion shaft *Steel: 42 tons 24.0% along* Identification Mark on Do. *4212 WMC 16-8-14 1154 WMC 25-2-14*
Material of Wheel shaft *Steel* Identification Mark on Do. *4212 WMC 16-8-14 1154 WMC 25-2-14*
Material of Thrust shaft *Steel* Identification Mark on Do. *4212 WMC 16-8-14 1154 WMC 25-2-14*
Material of Tunnel shafts *Steel* Identification Marks on Do. *4212 WMC 16-8-14 1154 WMC 25-2-14*
Material of Screw shafts *Steel* Identification Marks on Do. *4212 WMC 16-8-14 1154 WMC 25-2-14*
Material of Steam Pipes *22.5 lb* Test pressure *100 lb*
Is an installation fitted for burning oil fuel *no* 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 *S.S. MANAAR: Rowan No 634*

General Remarks (State quality of workmanship, opinions as to class, etc.) *These engines and boilers have been built under special survey the materials and workmanship are of good description, they have been well fitted on board and tried under steam. This machinery is in our opinion eligible to have registration + L.M.C. 12.17 in the Register Book.*

The arrangements for filling & discharging oil to & from the double bottom is exactly similar to that fitted in the S.S. "Manaar" a plan of which was forwarded with the Report. It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12.17. 2 Steam Turbines geared to 1 Screw Shaft.

The amount of Entry Fee ... £ 3 : 0 : When applied for, *24.12.1914*
Special ... £ 59 : 3 : When received, *26.12.1914*
Donkey Boiler Fee ... £ ✓ : ✓ :
Travelling Expenses (if any) £ ✓ : ✓ :
John H. McKeand Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 27 DEC. 1917**
Assigned *+ L.M.C. 12.17*