

## REPORT ON MACHINERY.

No. 42121

WED. AUG. 30 1922

Received at London Office

Date of writing Report 28. 8. 1922 When handed in at Local Office 28. 8. 1922 Port of Glasgow

No. in Survey held at Dalnair

Date, First Survey 8. 2. 1921 Last Survey 15. 8. 1922

Reg. Book.

(Number of Visits 35)

on the S.S. "British Commerce"

Tons Gross 4205

Net 2310

Master

Built at Dalnair

By whom built Tom Beardmore &amp; Co. (625) When built 1922

Engines made at Dalnair

By whom made Tom Beardmore &amp; Co. (625) when made 1922

Boilers made at Dalnair

By whom made Tom Beardmore &amp; Co. (625) when made 1922

Registered Horse Power

Owners British Tankers Red

Port belonging to London

Nom. Horse Power as per Section 28 349

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

## ENGINES, &amp;c.—Description of Engines Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 23" 36" 58"

Length of Stroke 42"

Revs. per minute 70

Dia. of Screw shaft

as per rule 127

Material of screw shaft steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes

Is the after end of the liner made water tight

in the propeller boss yes

If the liner is in more than one length are the joints burned no

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 two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush 4' 10"

Dia. of Tunnel shaft

as per rule 11.3

Dia. of Crank shaft journals

as per rule 11.375

Dia. of Crank pin 12 1/4"

Size of Crank webs 8" x 22 1/2"

collars 12 1/4"

Dia. of screw 10-9

Pitch of Screw 15-0

No. of Blades 4

State whether moveable yes

Total surface 30 1/4"

No. of Feed pumps 2

Diameter of ditto 4"

Stroke 24"

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2

Diameter of ditto 4"

Stroke 24"

Can one be overhauled while the other is at work yes

No. of Donkey Engines 5

SIZES OF PUMPS 7 1/4" x 5" 6 1/2" x 4 1/2" 10"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room (3) 3 1/2"

In Holds, &amp;c. (1) 2 1/2" in well in boiler room

No. of Bilge Injections 1

size 7 1/2"

Connected to condenser, or to circulating pump pump

Is a separate Donkey Suction fitted in Engine room &amp; size yes 3 1/2"

Are all the bilge suction pipes fitted with roses yes

Are the roses in Engine room always accessible yes

Are the sluices on Engine room bulkheads always accessible none

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 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 steam heating pipes

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 none

Is it fitted with a watertight door

worked from

## BOILERS, &amp;c.—(Letter for record 7)

Manufacturers of Steel Tom Beardmore &amp; Co.

Total Heating Surface of Boilers 5348 1/2

Is Forced Draft fitted yes

No. and Description of Boilers 2 Single ended

Working Pressure 180

Tested by hydraulic pressure to 320

Date of test 12/12/21, 26/12/21 No. of Certificate 15972, 15983

Can each boiler be worked separately yes

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler 2 Spring loaded

Area of each valve 11.04"

Pressure to which they are adjusted 185

Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork well clear

Mean dia. of boilers 14-6"

Length 12-3

Material of shell plates steel

Thickness 3/32"

Range of tensile strength 28 to 32

Are the shell plates welded or flanged yes

Descrip. of riveting: cir. seams double lap

long. seams tubular butt

Diameter of rivet holes in long. seams 1 5/16"

Pitch of rivets 8 3/4"

Lap of plates or width of butt straps 19 3/8"

Per centages of strength of longitudinal joint

rivets 97.5

plate 83.0

Working pressure of shell by rules 184

Size of manhole in shell 16" x 12"

Size of compensating ring 2' 9" x 2' 5"

No. and Description of Furnaces in each boiler 3 Doughton

Material steel Outside diameter 42 1/4"

Length of plain part

top 3

bottom 3

Thickness of plates

crown 3 1/2"

bottom 3 1/2"

Description of longitudinal joint welded

No. of strengthening rings

Working pressure of furnace by the rules 180

Combustion chamber plates: Material steel Thickness: Sides 1/16"

Back 1/16"

Top 1/16"

Bottom 1/16"

Pitch of stays to ditto: Sides 9 1/2" x 9 1/2"

Back 10" x 9"

Top 9" x 9 1/2"

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 181

Material of stays iron

Area at smallest part 2.03

Area supported by each stay 90"

Working pressure by rules 180

End plates in steam space:

Material steel Thickness 1 1/8"

Pitch of stays 19" x 17"

How are stays secured 2 nuts

Working pressure by rules 192

Material of stays steel

Area at smallest part 5.92

Area supported by each stay 323"

Working pressure by rules 192

Material of Front plates at bottom steel

Thickness 1/16"

Material of Lower back plate steel

Thickness 3/32"

Greatest pitch of stays 14 1/2"

Working pressure of plate by rules 182

Diameter of tubes 2 1/2"

Pitch of tubes 3 3/4" x 3 3/8"

Material of tube plates steel

Thickness: Front 1/16"

Back 1/16"

Mean pitch of stays 11 1/16"

Pitch across wide water spaces 13 1/2"

Working pressures by rules 182

Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 9 1/2" x 3 1/4"

Length as per rule 23 1/2"

Distance apart 8 1/2" x 19 1/2"

Number and pitch of stays in each (3) 9"

Working pressure by rules 181

Steam dome: description of joint to shell none

% of strength of joint

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Diam. 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 Easing Gear fitted

1710-8955-0141



IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded? *yes*

SPARE GEAR. State the articles supplied:— 2 top end bolts & nuts 2 bottom end bolts & nuts 2 main bearing bolts & nuts 1 set of coupling bolts & nuts, feed and blow pump valves iron bolts & nuts omitted!

The foregoing is a correct description,

WILLIAM BEARDMORE & CO., LIMITED

*W. Beaton*

Manufacturer.

Dates of Survey while building { During progress of work in shops --- 1921 Feb 8-9 Mar 8-17 Apr 5-15-26 May 27-30 Jun 3 Aug 16-19 24-31 Sep 13-20-27-30 Oct 11-20-27 Nov 4-17-24-28  
During erection on board vessel --- Dec 15-26 1922 Feb 23 Mar 23 July 7-27 Aug 4-8-15.  
Total No. of visits 35

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders 15/12/21 Slides 23/2/22 Covers 15/12/21 Pistons 23/2/22 Rods 23/2/22  
Connecting rods 23/2/22 Crank shaft 23/2/22 Thrust shaft 23/2/22 Tunnel shafts 23/2/22 Screw shaft 23/2/22 Propeller 23/2/22  
Stern tube 23/2/22 Steam pipes tested 27/7/22 Engine and boiler seatings 23/3/22 Engines holding down bolts 7/7/22  
Completion of pumping arrangements 15/5/22 Boilers fixed 7/7/22 Engines tried under steam 22/8/22  
Completion of fitting sea connections 23/3/22 Stern tube 23/3/22 Screw shaft and propeller 23/3/22  
Main boiler safety valves adjusted 15/2/22 Thickness of adjusting washers *SP Boiler 7/8, Port boiler 3/32*  
Material of Crank shaft *Steel* Identification Mark on Do. *23/2/22* Material of Thrust shaft *Steel* Identification Mark on Do. *23/2/22*  
Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *Steel* Identification Marks on Do. *23/2/22*  
Material of Steam Pipes *5D Steel* Test pressure *500 PSI*

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 duplicate of a previous case *yes* If so, state name of vessel "British Enterprise", "Saint Jerome"

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines & 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 notification of H.L.M.C 8.22. and "Fitted for oil fuel F.P. above 150°F" in The Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.22. FD. CL.

Fitted for oil fuel 8.22, FP above 150°F.

MACHINERY DEPT. WRITTEN.

The amount of Entry Fee ... £ 5 : :  
Special ... £ 77 : 7 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 25/8/22  
When received, 20/8/22

Committee's Minute GLASGOW 29 AUG 1922

Assigned + LMC 8.22 FD.

Fitted for oil fuel 8.22 F.P. above 150°F.

A. M. McLean W. Gordon. Macdonald  
Engineer Surveyor to Lloyd's Register of Shipping.



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Date of writing  
No. in Reg. Book.  
Master  
Engines m  
Boilers m  
Registered  
MULTIT  
(Letter for  
Boilers /  
No. of Cert  
safety valve  
Are they fit  
Smallest di  
Material of  
Descrip. of  
Lap of pla  
rules / 84  
boiler 22  
Description  
plates: Ma  
Top 9' 9"  
smallest pa  
Pitch of st  
Area suppo  
Lower back  
Pitch of tu  
water space  
girder at ce  
Working pr  
Diameter  
Pitch of ric  
SUPERH  
Date of Test  
Diameter of  
VERTIC  
Made at  
tested by hyd  
No. of safety  
enter the don  
strength  
Lap of plat  
Radius of d  
Thickness of  
plates  
Thickness of  
Dates of Survey while building

Certificate (if required) to be sent to Glasgow  
The Surveyors are requested not to write on or below the space for Committee's Minute.