

REPORT ON MACHINERY.

No. 81421

Received at London Office 19 JUN. 1919

Writing Report 14th June 1919 When handed in at Local Office

10 Port of Belfast

Survey held at Belfast

Date, First Survey 27th Feb^r 1919 Last Survey 11th June 1919

on the T.S.S. Albion Star

(Number of Visits 34)

Gross 7920

Net 4908

When built 1919

Built at Belfast

By whom built Workman Clark & Co. Ltd

Tons

made at Belfast

By whom made

when made

made at

By whom made

when made

Horse Power 1138

Owner The Blue Star Line Ltd

Port belonging to London

Horse Power as per Section 28 1138

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

INES, & Co. — Description of Engines Twin Screw Triple Expansion No. of Cylinders 6 No. of Cranks 6

of Cylinders 26 $\frac{1}{2}$ - 44 - 73 Length of Stroke 48 Revs. per minute 82 Dia. of Screw shaft as per rule 14.8 Material of screw shaft as fitted 15.75 I. Steel

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

The propeller boss Yes If the liner is in more than one length are the joints burned 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

are fitted, is the shaft lapped or protected between the liners Length of stern bush 63

Dia. of Tunnel shaft as per rule 13.7 Dia. of Crank shaft journals as per rule 14.37 Dia. of Crank pin 4.3 Size of Crank webs 23 x 9 Dia. of thrust shaft under

bars 15 Dia. of screw 17.3 Pitch of Screw 18.0 No. of Blades 4 State whether moveable Yes Total surface 90 sq ft

No. of Feed pumps 2 Diameter of ditto 4 $\frac{1}{2}$ Stroke 24 Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 4 $\frac{1}{2}$ Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines See others on page No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 6 - 3 $\frac{1}{2}$ In Holds, &c. / 2 - 3 $\frac{1}{2}$ + 1 - 2 $\frac{1}{2}$ No. of Bilge Injections 2 sizes 13 Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 1 - 3 $\frac{1}{2}$

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

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 bunker Fore hold suction 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 of Engine Room

MILERS, & Co. — (Letter for record 5) Manufacturers of Steel Beardmore & Co. Ltd Glasgow

Total Heating Surface of Boilers 7079 sq ft Forced Draft fitted Yes No. and Description of Boilers 3 Double End Cylind

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 1 - 3 - 19 No. of Certificate

Can each boiler be worked separately Yes Area of fire grate in each boiler 146 $\frac{1}{2}$ sq ft No. and Description of Safety Valves to

each boiler 3 - Direct Spring Area of each valve 14.9 sq Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 14 Mean dia. of boilers 16 - 3 Length 20 - 6 Material of shell plates Steel

Thickness 1 $\frac{1}{2}$ Range of tensile strength 28 - 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap Rivetseams Lap Rivet Diameter of rivet holes in long. seams 1 $\frac{1}{2}$ Pitch of rivets 10 $\frac{1}{2}$ Lap of plates or width of butt straps 22 $\frac{1}{2}$

Percentages of strength of longitudinal joint rivets 85.2 plate 85.7 Working pressure of shell by rules 207 lbs Size of manhole in shell 16 x 12

No. of compensating ring No. and Description of Furnaces in each boiler 8 - Deighton Material Steel Outside diameter 44 $\frac{1}{2}$

Length of plain part top 4 bottom 10 Thickness of plates crown 3.12 bottom 3.22 Description of longitudinal joint Weld No. of strengthening rings

Working pressure of furnace by the rules 213 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 $\frac{1}{2}$ Back 1 $\frac{1}{2}$ Top 1 $\frac{1}{2}$ Bottom 1 $\frac{1}{2}$ No. of stays to ditto: Sides 9 x 8 $\frac{1}{2}$ Back 7 x 6 $\frac{1}{2}$ Top 7 x 6 $\frac{1}{2}$ If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 211 lbs

Material of stay Steel Area at smallest part 2.06 sq supported by each stay 178 sq Working pressure by rules 241 lbs End plates in steam space:

Material Steel Thickness 1 $\frac{1}{2}$ Pitch of stays 2 $\frac{1}{2}$ x 16 How are stays secured Nuts inside Working pressure by rules 201 lbs Material of stays Steel

Area at smallest part 7.06 sq Area supported by each stay 336 sq Working pressure by rules 218 lbs Material of Front plates at bottom Steel

Thickness 1 Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes 2 $\frac{1}{2}$ Pitch of tubes 3 $\frac{3}{4}$ x 3 $\frac{3}{4}$ Material of tube plate Steel Thickness: Front 1 $\frac{1}{4}$ Back 1 $\frac{1}{4}$ Mean pitch of stays 1 $\frac{1}{2}$ x 7 $\frac{1}{2}$ Across wide water spaces 13 $\frac{1}{2}$ Working pressures by rules 203 lbs Girders to Chamber tops: Material Steel Depth andThickness of girder at centre (8 x 4) x 2 Length as per rule 52 $\frac{1}{2}$ Distance apart 8 $\frac{1}{2}$ x 7 Number and pitch of stays in each 6 - 6 $\frac{1}{2}$ + 8 $\frac{1}{2}$

Working pressure by rules 235 lbs Steam dome: description of joint to shell % 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 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

2020

Lloyd's Register
Foundation

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Stringer
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Bowsprit
Topmasts
Rigging
Sails

IS A DONKEY BOILER FITTED? *No* *if so, is a report now forwarded?* *✓*

SPARE GEAR. State the articles supplied: *See separate sheet*

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED.
M. H. Bell Manufacturer.

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods
Connecting rods Crank 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 fixed Engines tried under steam
Completion of fitting sea connections Stern tube Screw shaft and propeller
Main boiler safety valves adjusted *2-6-79* Thickness of adjusting washers *7-13/32*
Material of Crank shaft *Steel* Identification Mark on Do. Material of Thrust shaft *Steel* Identification Mark on Do. *✓*
Material of Tunnel shafts *do* Identification Marks on Do. Material of Screw shafts *do* Identification Marks on Do. *✓*
Material of Steam Pipes *H. Iron* Test pressure *600 lb*
Is an installation fitted for burning oil fuel *No* 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 *Yes* *C. Standish* T.S. "Royal Star"
Is this machinery duplicate of a previous case *Yes* *C. Standish* T.S. "Royal Star"

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel is of good material and workmanship. It has been built under our Survey, and is in accordance with the Rules, except that the boiler material and the forgings were tested by the Board of Trade, and British Corporation Surveyors instead of ours.
On trial under steam in Belfast Lough, the machinery was satisfactorily, and in our opinion, it is eligible for record + L.M.C. 6-19, with notation "Fresh Draft" & "Electric Light & Pumping Machinery".

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 6. 19. F.D.
J.W.D. 27/6/19 *R.F. Beveridge* + *W. H. Cope*
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee *£ 14. 6. 1919* When applied for, *14. 6. 1919*
Special *£ 66* : 13 :
Total inclusive fee
Donkey Boiler Fee *£ 18. 6. 1919* When received, *18. 6. 1919*
Travelling Expenses (if any) *£* : :
Committee's Minute TUE. 8-JUL. 1919
Assigned *+ L.M.C. 6. 19*
F.D. MACHINERY CERTIFICATE
WRITTEN.

Rpt. 9a. Port of *Belfast* Continuation of Report No. 8142 dated 14th June 1919 on the *S.S. Albion Star*

1 Ballast Pump *10 1/2" x 14" x 24"* *✓*
1 Fresh Water *3" x 3" x 4"* *✓*
1 Fan Feed *9 1/2" x 7" x 18"* *✓*
2 Main *15 1/2" x 11 1/2" x 24"* *✓*
1 General *9 1/2" x 7" x 18"* *✓*
1 Main Circulating Cent. *13" pipes* *✓*
1 Fan *6"* *✓*

Principal items of Spare Gear
8 Connecting Rod Top & bottom end bolts & nuts *✓*
4 Main bearing bolts & nuts *✓*
6 Coupling bolts & nuts *✓*
Set feed & ball pump valves *✓*
3 Main & 3 Fan feed check valves *✓*
2 Propeller blades *✓*
9 Studs & nuts for do *✓*
1 Fan pump rod & nut *✓*
1 " " Guard *✓*
1 Slide valve spindle *✓*
250 Fine bars *✓*
20 Main Condenser tubes & 80 formers *✓*
1 Pair connecting rod bottom end bushes *✓*
1 " " top *✓*
Set metallic packing H.P. piston rod *✓*
30 Boiler tubes *✓*
Set spare gear for Main & Fan feed pumps *✓*
" " " " Ballast & Main Cws. *✓*
" " " " Fan Engines *✓*
" " " " Mischers *✓*
Bolts, nuts, iron etc. *✓*

R.F. Beveridge