

REPORT ON MACHINERY.

No. 9686

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Date of writing Report 19 When handed in at Local Office 30.3.17 19 Port of Middlesbrough

No. in Survey held at Stockton-on-Tees Date, First Survey 19th Jan 1916 Last Survey 27th March 1917

Reg. Book. on the Steel Screw Steamer IKEDA (S.S. N^o 650) (Number of Visits)

Master H. McNeegg Built at Stockton By whom built Richardson Duck & Co Tons { Gross 6311. Net 4761. When built 1917

Engines made at Stockton By whom made Messrs Blair & Co Ltd (N^o 1837) when made 1917

Boilers made at Stockton By whom made Messrs Blair & Co Ltd when made 1917

Registered Horse Power Owners The Union Steamship Co of British Columbia Ltd Port belonging to Liverpool & Wintons

Nom. Horse Power as per Section 28 409 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26-42-70 Length of Stroke 48 Revs. per minute 64 Dia. of Screw shaft as per rule 14.48 Material of Eng Shaft as fitted 16.74 screw shaft

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 in one 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 tight fit If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-4"

Dia. of Tunnel shaft as per rule 12.98 Dia. of Crank shaft journals as per rule 13.63 Dia. of Crank pin 14.5 Size of Crank webs 28.4 x 9.2 Dia. of thrust shaft under collars 14.74 Dia. of screw 17.6 Pitch of Screw 17.6 No. of Blades 4 State whether moveable no Total surface 100 sq

No. of Feed pumps 2 Diameter of ditto 3.5 Stroke 34 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 5 Stroke 34 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 7 x 10 7 x 10 8 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 @ 3.5 In Holds, &c. 2 @ 3.5 each hold except aftermost when 3 @ 3.5

No. of Bilge Injections 1 sizes 7 Connected to condenser or circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes - 4"

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 no

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

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 suction to forward holds How are they protected wood ceiling

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 see hull Rpt Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (3)) Manufacturers of Steel Messrs John Spencer & Sons Ltd

Total Heating Surface of Boilers 6851 Is Forced Draft fitted no No. and Description of Boilers 3 single ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 26.9.16 No. of Certificate 5687

Can each boiler be worked separately yes Area of fire grate in each boiler 64.4 sq No. and Description of Safety Valves to each boiler 2 direct Spring Area of each valve 8.29 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-3" External Mean dia. of boilers 15'-9" Length 10'-6" Material of shell plates Steel

Thickness 1.4 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R. lap long. seams 2 B-3 Riv Diameter of rivet holes in long. seams 1.5 Pitch of rivets 9.5 Lap of plates or width of butt straps 19.5 x 1.3

Per centages of strength of longitudinal joint rivets 88.1 plate 85.62 Working pressure of shell by rules 182 Size of manhole in shell 16" x 12"

Size of compensating ring 7.5 x 1.5 No. and Description of Furnaces in each boiler 3 Brighton Material steel Outside diameter 49.75

Length of plain part top 19 bottom 32 Thickness of plates crown 19 bottom 32 Description of longitudinal joint Weld No. of strengthening rings

Working pressure of furnace by the rules 184 Combustion chamber plates: Material steel Thickness: Sides 1.5 Back 1.5 Top 1.5 Bottom 1

Pitch of stays to ditto: Sides 8.5 x 9.5 Back 9.5 x 9.5 Top 10.5 x 8.5 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays steel Area at smallest part 1.99 Area supported by each stay 90.25 Working pressure by rules 198 End plates in steam space: 9 x 1 washers Working pressure by rules 185 Material of stays steel

Material steel Thickness 1.5 Pitch of stays 21 x 21 How are stays secured nuts & washers Working pressure by rules 185 Material of Front plates at bottom steel

Area at smallest part 7.85 Area supported by each stay 441 Working pressure by rules 185 Material of Front plates at bottom steel

Thickness 1.52 Material of Lower back plate steel Thickness 1.52 Greatest pitch of stays 14.5 x 9.5 Working pressure of plate by rules 232

Diameter of tubes 3.4 Pitch of tubes 4.5 x 4.5 Material of tube plates steel Thickness: Front 1.52 Back 1.3 Mean pitch of stays 10.3

Pitch across wide water spaces 14.4 Working pressures by rules 187 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7.3 x 1.3 Length as per rule 29.5 Distance apart 10.5 Number and pitch of stays in each 2 @ 8.4

Working pressure by rules 183 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 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

iameter 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:— *Two each of con. rod top end, bottom end and main bearing bolts and nuts: one set of coupling bolts and nuts: one set of feed and bilge pump valves: assorted bolts and nuts iron of various sizes: one cast iron propeller and minor gear*

The foregoing is a correct description,

For BLAIR & Co., LIMITED.

G.W. Nettleship

Manufacturer.

During progress of work in shops -- *May 2. 21. 28. 30. July 3. 6. 7. 11. 14. 21. 26. 28. Aug 3. 4. 7. 8. 9. 10. 11. 15. 17. 22. 24. Sep 1. 11. 13. 18. 20. 26. Oct 2. 3. 5. 10. 12. 14. 17. 19. 20. 23. 26. 30. Nov 1. 3. 7. 8. 9. 13. 15. 17. 20. 21. 22. 23. 25. 27. 28. 30. Dec 1. 14. 1917. Jan 12. 17. 24. 26. 29. Feb 9. 12. 15. 19. Mar 5. 9. 13. 16. 21. 24. 26. 27*
During erection on board vessel --
Total No. of visits *9th.*

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

" " " donkey " *no*

Dates of Examination of principal parts—Cylinders *10. 10. 16* Slides *10. 10. 16* Covers *17. 10. 16* Pistons *10. 10. 16* Rods *23. 10. 16*
Connecting rods *17. 10. 16* Crank shaft *19. 10. 16* Thrust shaft *30. 10. 16* Tunnel shafts *4/5/16 10/10/16* Screw shaft *17. 11. 16* Propeller *20. 11. 16*
Stern tube *21. 11. 16* Steam pipes tested *4/5 18/10/16* Engine and boiler seatings *21. 11. 16* Engines holding down bolts *12. 2. 17*
Completion of pumping arrangements *26. 3. 17* Boilers fixed *9. 3. 17* Engines tried under steam *9. 3. 17*
Completion of fitting sea connections *14. 12. 16* Stern tube *14. 12. 16* Screw shaft and propeller *17. 1. 17*
Main boiler safety valves adjusted *9. 3. 17* Thickness of adjusting washers *P. B. 1/2" S. 1/2" P. 1/4" S. 1/4" For B. A. V. 9/32"*
Material of Crank shaft *Ing Steel* Identification Mark on Do. *7056* Material of Thrust shaft *Ing Steel* Identification Mark on Do. *1649-N*
Material of Tunnel shafts *Ing Steel* Identification Marks on Do. *1649-N* Material of Screw shafts *Ing Steel* Identification Marks on Do. *7056*
Material of Steam Pipes *Lap welded steel* Test pressure *540 lbs*

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 *✓*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *S.S. "Indianola", Indb Rpt 7200*

General Remarks (State quality of workmanship, opinions as to class, &c. *Through a mistake the bilge suction valves for the deep tank were made "lifting" instead of "non-return", as required by the approved pumping plan. As time would not allow alterations to be made and as sea water cannot enter the tank through these valves, the arrangement now fitted is submitted for favourable consideration*

The machinery of this vessel has been built under special survey. The materials & workmanship are sound and good. The boilers and steam pipes were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory

The machinery is now in a good and safe working condition and renders the vessel eligible in my opinion to have the notation of *LMC-3.17* in the Register Book

This vessel is fitted with Electric Light and "Wireless"

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 3.17.

The amount of Entry Fee ... £ *3 5 0* When applied for, *30/3/17*
Special ... £ *40 5 0*
Donkey Boiler Fee ... £ *✓* When received, *10/4/17*
Travelling Expenses (if any) £ *✓*

Committee's Minute *WED. 11 APR. 1917*

Assigned *+ LMC 3.17*

Wm Morrison
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation