

REPORT ON MACHINERY.

No. 12964.

Received at London Office

Date of writing Report

10

When handed in at Local Office

11. 3. 1922. Port of Aberdeen

THE 14 MAR. 1922

No. in Survey held at Aberdeen
Reg. Book.

Date, First Survey 13. 12. 1920. Last Survey 16. 2. 1922.

on the Steel S. S. "DRACO" No 680.

(Number of Visits 66.)

Tons { Gross 2014.50
Net 1137.27

Master ✓ Built at Aberdeen. By whom built Yball Russell & Co. Ltd.

When built 1922.

Engines made at Aberdeen. By whom made Yball Russell & Co. Ltd. No. 680. when made 1922.

Boilers made at Aberdeen. By whom made ditto ditto - 680. when made 1922.

Registered Horse Power 291. Owners Collerman's Wilson Line Ltd. Port belonging to Hull.

Com. Horse Power as per Section 28 291. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted yes.

ENGINES, &c.—Description of Engines Triple expansion. No. of Cylinders 3. No. of Cranks 3.

Dia. of Cylinders 14 3/4, 30 1/2, 53" Length of Stroke 36" Revs. per minute 94 Dia. of Screw shaft as per rule 11.262 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

at the propeller boss yes. If the liner is in more than one length are the joints burned 1 length 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 no space. If two

liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4' 6"

Dia. of Tunnel shaft as per rule 10.03 Dia. of Crank shaft journals as per rule 10.53 Dia. of Crank pin 10 1/2" Size of Crank webs 14" x 6 1/2" Dia. of thrust shaft under

collars 10 1/2" Dia. of screw 13' 9" Pitch of Screw 12' 9" No. of Blades 4 State whether moceable no. Total surface 607

No. of Feed pumps 2. Diameter of ditto 6" x 8" Stroke 21" Can one be overhauled while the other is at work yes.

No. of Bilge pumps 2. Diameter of ditto 3" Stroke 20" Can one be overhauled while the other is at work yes.

No. of Donkey Engines Two Sizes of Pumps BALLAST 4 1/2 x 4 1/2" GEN. SER. 6 x 4 x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

in Engine Room ✓ of 2 1/2" TUNNEL WELL 1 of 2 1/2" In Holds, &c. No. I HOLD. 2 of 2 1/2" No. II HOLD. 2 of 2 1/2"

No. III HOLD. 2 of 2 1/2" No. of Bilge Injections 1. sizes 5 1/2" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 2 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 valves & Cocks.

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 Excs from Nos 1 & 2 Holds. How are they protected strong 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 upper grating in engine room.

BOILERS, &c.—(Letter for record (7)) Manufacturers of Steel Steel Cy of Scotland Ltd - W. Beardmore & Co. Ltd.

Total Heating Surface of Boilers 44107 Is Forced Draft fitted yes. No. and Description of Boilers Two, cyl., mult. single ended.

Working Pressure 225 lbs. Tested by hydraulic pressure to 390 lbs Date of test 29. 4. 21 No. of Certificate 1008.

Can each boiler be worked separately yes. Area of fire grate in each boiler 56.7 No. and Description of Safety Valves to

each boiler 2: direct spring Area of each valve 4.04 Pressure to which they are adjusted 230 lbs. Are they fitted with easing gear yes.

Smallest distance between boilers or uptakes and bunkers or woodwork NO SIDE BUNKERS dia. of boilers 13' 9" Length 12' 6" Material of shell plates S.

Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. lap.

Long. seams double straps Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9 1/2" - 4 1/2" Lap of plates or width of butt straps 20" x 1 1/4" out.

Percentages of strength of longitudinal joint rivets 85.6 Working pressure of shell by rules 224.4 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 40" x 31" RECT. No. and Description of Furnaces in each boiler 3. Beighton Material S. Outside diameter 44 3/4"

Length of plain part top 3" Thickness of plates bottom 1 1/2" Description of longitudinal joint weld. No. of strengthening rings ✓

Working pressure of furnace by the rules 253. Combustion chamber plates: Material S. Thickness: Sides 1 1/2" Back 1 1/2" Top 3/4" Bottom 1 1/2"

Pitch of stays to ditto: Sides 9 3/4" x 1 1/2" Back 9" x 1 1/2" Top 9 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts. Working pressure by rules 231.

Material of stays S. Area at smallest part 2.25 Area supported by each stay 69.95 Working pressure by rules 242. End plates in steam space:

Material S. Thickness 1 3/2" Pitch of stays 18 1/2" x 18" How are stays secured d. r. w. Working pressure by rules 233. Material of stays S.

Area at smallest part 4.235 Area supported by each stay 333. Working pressure by rules 226. Material of Front plates at bottom S.

Thickness 1 1/2" Material of Lower back plate S. Thickness 3/2" Greatest pitch of stays 14 1/2" x 8 1/2" Working pressure of plate by rules 231.

Diameter of tubes 2 1/2" ext Pitch of tubes 3 3/4" x 3 7/8" Material of tube plates S. Thickness: Front 1 1/2" Back 1 1/2" Mean pitch of stays 9 1/2" FULL.

Pitch across wide water spaces 13 1/2" Working pressures by rules F. 238. B. 244. Girders to Chamber tops: Material S. Depth and

thickness of girder at centre 11 1/8" x 1 3/4" Length as per rule 34 7/8" Distance apart 9 1/2" Number and pitch of stays in each three - 8 1/2"

Working pressure by rules 226. 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 2021

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 ✓



W26-0211

IS A DONKEY BOILER FITTED? *No.*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top & two bottom end bolts & nuts; 2 main bearings and 1 set coupling bolts & nuts; one set each, three Bilge pump valves; 1 each, main and donkey check valve; 1 each, bottom end brasses; 1 piston rod, with brasses & bolts; 3 junk iron bolts; 1 ecc. strap, rod & valve spindle, & valve complete; 1 set piston rings; 1 escape valve spring each size; 1 Impeller shaft for circulating pump; 5 condenser tubes, & 20 ferrules; 2 safety valve springs; 5 boiler tubes. 1 cast iron propeller, bored and keyway cut bolts and nuts assorted, road iron of various sizes—*

The foregoing is a correct description,

FOR HALL, RUSSELL & CO., LTD.

James Hunter DIRECTOR.

Manufacturers of Main Engines & Boilers.

Dates of Survey while building { During progress of work in shops -- } *1920 Dec. 13 - 1921 Jan 15, 26 Feb 25 Mar 1, 9, 16, 18, 23 - Apr 29 - May 4, 6, 9, 12, 20, 24, 30 - June 2, 6, 10, 14, 16, 18, 22, 24, 28*
{ During erection on board vessel - - - } *July 6, 29 - Aug 2, 3, 4, 5, 8, 11, 14, 18, 19, 22, 23, 25, 30 - Sept 1, 2, 5, 6, 9, 12, 16, 21, 24 - Oct 3, 6, 14, 17, 24 - Nov 5, 8, 15, 24, 30 -*
Total No. of visits *66/ Dec. 4, 13, 19, 21 - 1922 Feb. 14, 16/* Is the approved plan of main boiler forwarded herewith *yes.*

Dates of Examination of principal parts—Cylinders *22. 6. 21* Slides *12. 5. 21* Covers *28. 6. 21* Pistons *28. 6. 21* Rods *28. 6. 21*
Connecting rods *6. 6. 21* Crank shaft *30. 5. 21* Thrust shaft *22. 6. 21* Tunnel shafts *22. 6. 21* Screw shaft *22. 6. 21* Propeller *30. 5. 21*
Stern tube *24. 5. 21* Steam pipes tested *9. 9. 21* Engine and boiler seatings *18. 8. 21* Engines holding down bolts *18. 8. 21*
Completion of pumping arrangements *30. 8. 21* Boilers fixed *16. 9. 21* Engines tried under steam *16. 2. 22*
Completion of fitting sea connections *28. 6. 21* Stern tube *2. 6. 21* Screw shaft and propeller *28. 6. 21*
Main boiler safety valves adjusted *24. 11. 21* Thickness of adjusting washers *Port Boiler P³² S^{3/16} - Starb⁴ Boiler P³² S^{3/16}*
Material of Crank shaft *steel* Identification Mark on Do. Material of Thrust shaft *steel* Identification Mark on Do. *1365A*
Material of Tunnel shafts *steel* Identification Marks on Do. *1366A, 1367A, 1368A, 1369A* Material of Screw shafts *STEEL* Identification Marks on Do. *1340A*
Material of Steam Pipes *Steel Solid drawn 4" bore 7/8" thick* Test pressure *645 lbs per sq inch*
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 *no.* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines and Boilers, have been constructed under special survey, and in accordance with the Secretary's letters the Rules, and approved plans. The materials, and workmanship are good. When completed and properly fitted on board, they were tried under at full power for four consecutive hours at sea, the results being in every way satisfactory.*

An electric light installation has been fitted on board a report on which is forwarded herewith.

It is submitted that this vessel is eligible for THE RECORD. *F. L. M. C. - 2. 22. F. D. C. L.*

MACHINERY CERT. WRITTEN.

Ans. L. G. 17/3/22.

The amount of Entry Fee ... £ *4* : : When applied for,
Special ... £ *68* : *13* : : *13. 3 1922*
Donkey Boiler Fee ... £ : : :
Travelling Expenses (if any) £ : : : *16/3/22*

Ridley Howell
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 21 MAR. 1922*
Assigned *+ L. M. C. 2. 22*
F. D. C. L.

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

Rpt. 13.
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