

## REPORT ON MACHINERY.

No. 28914

Received at London Office FRI. - 5 NOV. 1915

Date of writing Report 25-10-15 When handed in at Local Office 4-Nov-15 Port of Hull  
 No. in Survey held at Hull Date, First Survey Apr. 9 Last Survey Oct. 21-1915  
 Reg. Book. 336 on the steel screw steamer Kelvin (Number of Visits 27) Gross 322 Tons Net 130  
 Master Built at Tilly By whom built Cochran & Sons Ltd When built 1915-10  
 Engines made at Hull By whom made C. D. Holmes & Co. Ltd (H/1105) when made 1915-10  
 Boilers made at Hull By whom made C. D. Holmes & Co. Ltd when made 1915-10  
 Registered Horse Power Owners F. & J. Ross Ltd Port belonging to Hull  
 Nom. Horse Power as per Section 28 87 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks 3  
 Dia. of Cylinders 13"-23"-37" Length of Stroke 26" Revs. per minute Dia. of Screw shaft as per rule 7.88" Material of screw shaft as fitted 8" Iron  
 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 yes 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 35½"  
 Dia. of Tunnel shaft as per rule 7.04" Dia. of Crank shaft journals as per rule 7.39" Dia. of Crank pin 7½" Size of Crank web 4½" x 4½" Dia. of thrust shaft under collars 7½" Dia. of screw 9-7½" Pitch of Screw 11'-0" No. of Blades 4 State whether moveable no Total surface 33 ft²  
 No. of Feed pumps one Diameter of ditto 2½" Stroke 14¾" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps one Diameter of ditto 2½" Stroke 14¾" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines one & 3¼" Sizes of Pumps 6" 4½" x 6" Fly wheel No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 2" dia. In Holds, &c. one 2" in each compartment all suction also connected to ejector  
 No. of Bilge Injections one size 3½" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 3" ejector  
 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 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 Forward suction How are they protected strong wooden casings  
 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  
 Dates of examination of completion of fitting of Sea Connections 28-6-15 of Stern Tube 28-6-15 Screw shaft and Propeller 28-6-15  
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Stewart & Lloyd  
 Total Heating Surface of Boilers 1435 ft² Is Forced Draft fitted no No. and Description of Boilers one single ended  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 21-9-15 No. of Certificate 3101  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 47.8 ft² No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 4.9" Pressure to which they are adjusted 205 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers on woodwork 8" Mean dia. of boilers 165" Length 10'-6" Material of shell plates Steel  
 Thickness 1½" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double long. seams 7 R. & B. 1 Diameter of rivet holes in long. seams 1½" Pitch of rivets 8½" Lap of plates or width of butt straps 17½"  
 Per centages of strength of longitudinal joint rivets 84.4 plate 84.8 Working pressure of shell by rules 201 Size of manhole in shell 16" x 12"  
 Size of compensating ring 7" x 1½" No. and Description of Furnaces in each boiler Three plain Material S Outside diameter 40"  
 Length of plain part top 27¾ bottom Thickness of plates crown 13/16 Description of longitudinal joint welded No. of strengthening rings  
 Working pressure of furnace by the rules 207 Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 23/32 Top ¾ Bottom 23/32  
 Pitch of stays to ditto: Sides 10" x 8½" Back 9½" x 8½" Top 11" x 8½" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 201  
 Material of stays Steel Diameter at smallest part 2.07" Area supported by each stay 93.5" Working pressure by rules 200 End plates in steam space:  
 Material Steel Thickness 1½" Pitch of stays 14½" x 16" How are stays secured R. & W. Working pressure by rules 200 Material of stays Steel  
 Diameter at smallest part 7.5" Area supported by each stay 351" Working pressure by rules 222 Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 1" large washers fitted Greatest pitch of stays 16½" x 13½" Working pressure of plate by rules 215  
 Diameter of tubes 3½" Pitch of tubes 4¾" Material of tube plates Steel Thickness: Front 1" Back 7/8" Mean pitch of stays 9¾"  
 Pitch across wide water spaces 13¾" Working pressures by rules 203 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11¾" x 1¾" Length as per rule 37.22" Distance apart 11" Number and pitch of stays in each Three 8½"  
 Working pressure by rules 204 Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked separately ✓  
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



IS A DONKEY BOILER FITTED?

no

If so, is a report now forwarded?

✓

SPARE GEAR.

State the articles supplied: - Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one main & one donkey check valve, one set of air, feed & bilge pump valves, one injector check valve, one feed pump ram, one safety valve spring, one set of piston studs & nuts, one impeller shaft, condenser tubes, top & bottom end bolts for centrifugal pumps & a quantity of bolts & nuts & iron of various sizes.

The foregoing is a correct description,

P. 772 CHARLES D. HOLMES & CO. LTD.

Arthur Holmes

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1915: - Apr 9 May 7. 21 Jun 19. 25. 28. 29. 30 Jul 7. 12. 20. 23. 26. 28. 29 Aug 6. 13. 14  
During erection on board vessel - - - 16. 20. 25. 26. 29. 31 Sep 4. 7. 9. 10. 14. 15. 20. 21. 28 Oct 1. 4. 12. 16. 19. 21.  
Total No. of visits 39

Is the approved plan of main boiler forwarded herewith

forwarded in SS Magneta

" " " donkey " " "

Dates of Examination of principal parts - Cylinders 26-8-15 Slides 4-9-15 Covers 26-8-15 Pistons 31-8-15 Rods 31-8-15  
Connecting rods 31-8-15 Crank shaft 20-8-15 Thrust shaft 9-9-15 Tunnel shafts ✓ Screw shaft 25-6-15 Propeller 25-6-15  
Stern tube 28-6-15 Steam pipes tested 12-10-15 Engine and boiler seatings 28-6-15 Engines holding down bolts 4-10-15  
Completion of pumping arrangements 21-10-15 Boilers fixed 4-10-15 Engines tried under steam 21-10-15  
Main boiler safety valves adjusted 16-10-15 Thickness of adjusting washers 10 3/8" S 9/32

Material of Crank shaft Iron Identification Mark on Do. 1523 FLS Material of Thrust shaft Iron Identification Mark on Do. 708 F.D.D.V.

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 1472 J.G.M.

Material of Steam Pipes solid drawn copper Test pressure 40 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 11 Magneta Hull 28877. ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rules of this Society, the materials & workmanship are good. The boiler & steam pipes have been tested as above & found good, the machinery has been properly fitted & secured on board & on completion tried under full working conditions & found satisfactory. The safety valves have been adjusted under steam & tried for accumulation which did not exceed 208 lbs.

In my opinion the vessel is eligible for the record & L.M.C. 10.15.

Please return boiler plan for dealing with sister vessels

It is submitted that this vessel is eligible for THE RECORD & L.M.C. 10.15.

J.M. Sturges

5/11/15

Frank A. Sturges

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee ... £ 1 : 0 :  
Special ... £ 13 : 1 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : 4 :  
When applied for, 4/11/15  
When received, 30/11/15

Committee's Minute TUE NOV -9 1915

Assigned + L.M.C. 10.15

MAINTENANCE CERTIFICATE



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