

REPORT ON MACHINERY.

FRI. JUN. 26 1914.

No. 16636

Received at London Office

THU. APR. 16. 1914

Date of writing Report

19

When handed in at Local Office

9/4/10/14 Port of GreenockNo. in Survey held at Greenock
Reg. Book.Date, First Survey 11th Nov. 1913 Last Survey 4th April, 1914(Number of Visits 30)on the SCREW STEAMER "KEYNOR."Tons Gross 1806Net 1090When built 1914

Master

Built at LondonderryBy whom built North of Ireland S.S. Coy. Ltd.Engines made at GreenockBy whom made John G. Kincaid & Co. Ltd.when made 1914Boilers made at GreenockBy whom made John G. Kincaid & Co. Ltd.when made 1914

Registered Horse Power

Owners The Keystone Transportation Co. Ltd. belonging to Newcastle on TyneNom. Horse Power as per Section 163.Is Refrigerating Machinery fitted for cargo purposes NoIs Electric Light fitted Yes

ENGINES, &c.—Description of Engines

No. of Cylinders ThreeNo. of Cranks ThreeDia. of Cylinders 16-26-44Length of Stroke 36"Revs. per minute 97Dia. of Screw shaft 9 1/2"Material of screw shaft IronIs 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 one length If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive No If twoliners are fitted, is the shaft lapped or protected between the liners YesLength of stern bush 3' 3"Dia. of Tunnel shaft 8 1/2"Dia. of Crank shaft journals 9 1/2"Dia. of Crank pin 9 1/2"Size of Crank webs 16 1/2" x 5 1/2"

Dia. of thrust shaft under

collars 9 1/2"Dia. of screw 12' 0"Pitch of Screw 13' 0"No. of Blades 4State whether moveable YesTotal surface 45 sq. ft.No. of Feed pumps 2Diameter of ditto 2 1/2"Stroke 18"Can one be overhauled while the other is at work YesNo. of Bilge pumps 2Diameter of ditto 3 1/2"Stroke 18"Can one be overhauled while the other is at work YesNo. of Donkey Engines FourSizes of Pumps 2 1/2" x 10" 1 1/2" x 6" 1 1/2" x 6" 1 1/2" x 6"

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

In Engine Room 3-4"In Holds, &c. 6-4" + 2-6"No. of Bilge Injections 1sizes 4"Connected to condenser, or to circulating pump C. P.Is a separate Donkey Suction fitted in Engine room & size Yes 3"Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible NoAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the Discharge Pipes above or below the deep water line AboveAre they each fitted with a Discharge Valve always accessible on the plating of the vessel YesAre the Blow Off Cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers NoneHow are they protected NoAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 2.4.14of Stern Tube 2.4.14Screw shaft and Propeller 2.4.14Is the Screw Shaft Tunnel watertight NoneIs it fitted with a watertight door Noworked from NoBOILERS, &c.—(Letter for record 5)Manufacturers of Steel Hydrolage Steel Coy.Total Heating Surface of Boilers 2400 sq. ft.Is Forced Draft fitted YesNo. and Description of Boilers 2: Cylindrical: SingleWorking Pressure 180 lbs.Tested by hydraulic pressure to 360 lbs.Date of test 10/3/14No. of Certificate 1166Can each boiler be worked separately YesArea of fire grate in each boiler 35 1/2 sq. ft.

No. and Description of Safety Valves to

each boiler 2: Direct SpringArea of each valve 5.94 sq. in.Pressure to which they are adjusted 185 lbs.Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 16"Mean dia. of boilers 11' 6"Length 10' 6"Material of shell plates SteelThickness 1 1/8"Range of tensile strength 28/32 tonsAre the shell plates welded or flanged NoDescrip. of riveting: cir. seams Lap doublelong. seams Butt strapDiameter of rivet holes in long. seams 1 1/8"Pitch of rivets 4 1/2"Pitch of plates or width of butt straps 16"Per centages of strength of longitudinal joint 83%Working pressure of shell by rules 199 lbs.Size of manhole in shell 16" x 12"Size of compensating ring Flanged RingNo. and Description of Furnaces in each boiler 2: Deighton'sMaterial SteelOutside diameter 43 1/2"Length of plain part 6' 10"Thickness of plates 1 1/8"Description of longitudinal joint WeldNo. of strengthening rings NoneWorking pressure of furnace by the rules 189 lbs.Combustion chamber plates: Material SteelThickness: Sides 5"Back 1 1/8"Top 5"Bottom 1 1/8"Pitch of stays to ditto: Sides 8 1/2" x 8"Back 9 1/2" x 9 1/2"Top 8 1/2" x 8"If stays are fitted with nuts or riveted heads Auto.Working pressure by rules 191 lbs.Material of stays SteelDiameter at smallest part 1 1/2"Area supported by each stay 70 sq. in.Working pressure by rules 198 lbs.

End plates in steam space:

Material SteelThickness 1 1/8"Pitch of stays 15 1/2" x 14 1/2"How are stays secured Double nutsWorking pressure by rules 223 lbs.Material of stays SteelDiameter at smallest part 5.05"Area supported by each stay 225 sq. in.Working pressure by rules 235 lbs.Material of Front plates at bottom SteelThickness 1"Material of Lower back plate SteelThickness 3/8"Greatest pitch of stays 14"Working pressure of plate by rules 184 lbs.Diameter of tubes 2 3/4"Pitch of tubes 4" x 4"Material of tube plates SteelThickness: Front 1"Back 3/4"Mean pitch of stays 8"Pitch across wide water spaces 14"Working pressures by rules 195 lbs. 198 lbs.Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 8 1/2" x 1 1/2"Length as per rule 30.4"Distance apart 8"Number and pitch of stays in each 2: 8 1/2"Working pressure by rules 218 lbs.Superheater or Steam chest; how connected to boiler None

Can the superheater be shut off and the boiler worked

separately Yes

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

003321-003327-0157

If not, state whether, and when, one will be sent

In a Report also sent on the Hull of the Ship

11, 11, 10-T

Refused. water 2nd April 1914 to 17th June 1914. 40 of water 11

VERTICAL DONKEY BOILER—Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 2 Main Bearing Bolt nuts, 2 Crank pin Bush Bolt nuts, 2 Piston Rod Crosshead Bolt nuts, 1 Set Coupling Bolt nuts, 1 Set Feed pump valves, 1 Set Relief pump valves, 1 Set Air Pump valves, 1 Set Ballast pump valves, 1 Set Sanitary pump valves, 6 Condenser tubes & 8 ferrules for same, 4 Propeller Blades, 1 Set of Studs & nuts for same, 2 Main & Donkey Check valves

The foregoing is a correct description, Bolt nuts, Assorted Sizes, 50 lbs iron plates.

John G. Muirhead & Co Ltd Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1913 Nov. 11, 13, 17, Dec. 16, 17, 23, 26, 30, 1914 Jan. 7, 12, 14, 16, 26, 28, 29, Feb. 4, During erection on board vessel --- 10, 14, 19, 20, 25, Mar. 4, 10, 17, 20, 24, 26, 30, Apr. 3, 4, Belfast April 2, 9, 15, May 2, 7, 18, 22, June 2, 5, 9, 10, 17, Total No. of visits 30, Belfast 11

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 25/2/14 Slides 17/2/14 Covers 17/2/14 Pistons 17/2/14 Rods 7/1/14 Connecting rods 25/2/14 Crank shaft Satisfactory Thrust shaft Satisfactory Tunnel shafts Satisfactory Screw shaft 20/2/14 Propeller 24/2/14 Stern tube 20/2/14 Steam pipes tested 27-4-14 Engine and boiler seatings 9-11-14 Engines holding down bolts 25-11-14 Completion of pumping arrangements 10-6-14 Boilers fixed 25-11-14 Engines tried under steam 9-6-14 Main boiler safety valves adjusted 9-6-14 Thickness of adjusting washers 6-8-14

Material of Crank shaft Steel Identification Mark on Do. 3534 Material of Thrust shaft Steel Identification Mark on Do. 3541

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Iron Identification Marks on Do. 6132

Material of Steam Pipes Copper Test pressure 1400 lbs per sq

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Engines and Boilers of this vessel were built under Special Survey and the materials and workmanship are good. When completed at the works they were shipped to Londonderry where they will be fitted on board. When this has been done to the satisfaction of the Society's Surveyors, the machinery tested under steam, the spare gear checked, and the requirements of the Rules in all other respects carried out, the vessel will be eligible in my opinion to have the record of **LMC** (with date of completion) marked in the Society's Register Book.

The above has now been satisfactorily carried out, and in my opinion the vessel is eligible for record **+LMC 6-14**

It is submitted that this vessel is eligible for

THE RECORD. **+LMC 6.14. F.D. CL**

The amount of Entry Fee .. £ 2 : : When applied for, 10/4/1914

Special .. £ 24 . 9 : : When received, 4/6/1914

Donkey Boiler Fee .. £ : : Applied for 18-6-14 Received 22-6-14

Travelling Expenses (if any) £ 9 - 15-10

new at Londonderry Committee's Minute

Assigned

Deferred for completion

J.W.D. 29/6/14
Wm. Austin R. F. Beveridge
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI JUL 3-1914

MACHINERY CERTIFICATE WRITTEN

Lloyd's Register Foundation

GREENOCK

Confidence (if required) to be sent to

(The Surveyor is required not to write on or below the space for Committee's Minute.)