

REPORT ON MACHINERY.

Received at London Office

WED. DEC. -9 1914

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

No. in Survey held at Glasgow Date, First Survey 18/12/13 Last Survey 24-11-1914

Reg. Book. 61 on the STEEL TWIN SCREW S.S. "SIR HARVEY ADAMSON" (Number of Visits 51) Tons ^{Gross} 57 _{Net}

Master Built at Glasgow By whom built Messrs. A. & J. Inglis, Ltd. When built 1914

Engines made at Glasgow By whom made Messrs A & J. Inglis Ltd when made 1914

Boilers made at Glasgow By whom made Messrs A & J. Inglis Ltd when made 1914

Registered Horse Power Owners British India Steam Nav. Co. Ltd Port belonging to Glasgow

Nom. Horse Power as per Section 28 155 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Twin screw triple expansion No. of Cylinders 6 No. of Cranks 6

Dia. of Cylinders 21 (1 1/2 x 20 x 31) Length of Stroke 22 Revs. per minute Dia. of Screw shaft 4.34 Material of 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 in the propeller boss yes If the liner is in more than one length are the joints burned No 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 28 1/2

Dia. of Tunnel shaft 6.24 Dia. of Crank shaft journals 6.5-5.5 Dia. of Crank pin 6 3/4 Size of Crank webs 4 5/8 x 1 5/8 Dia. of thrust shaft under collars 6 3/4 Dia. of screw 8-6 Pitch of Screw 10-6 No. of Blades 3 State whether moveable yes Total surface 3300

No. of Feed pumps 1 Diameter of ditto 2 1/4 Stroke 10 Can one be overhauled while the other is at work yes

No. of Bilge pumps 1 Diameter of ditto 2 1/2 Stroke 10 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 5 x 4 x 12 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2-2" each side Independent Bilge suction 2 1/4 In Holds, &c. Tunnel well 2 1/4, After hold 2 1/4

Forward centre 2 1/4 Wing suction 2

No. of Bilge Injections 2 sizes 3 1/2 Connected to condenser, or to circulating pump C. P. Is a separate Donkey Suction fitted in Engine room & size yes 2 1/4

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 yes

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 Wooded timeways

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 26-10-14 of Stern Tube 3-11-14 Screw shaft and Propeller 3-11-14

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top grating in Eng Room

BOILERS, &c.—(Letter for record 8) Manufacturers of Steel Messrs W. Beardmore & D. Colville, Ltd.

Total Heating Surface of Boilers 23908 Ft. Sq. in 2 Boilers Forced Draft fitted yes No. and Description of Boilers 2 Single ended Marine

Working Pressure 215 lbs Tested by hydraulic pressure to 480 lbs Date of test 14-9-14 No. of Certificate 12571

Can each boiler be worked separately yes Area of fire grate in each boiler 36.5 No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 5.93 Pressure to which they are adjusted 215 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 9 1/2 Mean dia. of boilers 11-0 Length 11-0 Material of shell plates Steel

Thickness 1 1/32 Range of tensile strength 28/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D. P. & T.R.

long. seams T.P.D.B.S. Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 1/4 width of butt straps 18 1/2

Per centages of strength of longitudinal joint 91 Working pressure of shell by rules 244 lbs Size of manhole in shell 14 x 13

Size of compensating ring 3 x 9 x 7 x 1 1/32 No. and Description of Furnaces in each boiler 2 Corrugated Material Steel Outside diameter 3-6 1/2

Length of plain part Thickness of plates 9 1/16 Description of longitudinal joint weld No. of strengthening rings

Working pressure of furnace by the rules 225 Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 1

Pitch of stays to ditto: Sides 4 7/8 x 4 7/8 Back 4 7/8 x 4 7/8 Top 4 7/8 x 4 7/8 Bottom 4 7/8 x 4 7/8 Working pressure by rules 214

Material of stays Steel Diameter at smallest part 1.69 Area supported by each stay 62 Working pressure by rules 215 End plates in steam space: Material Steel Thickness 1 1/32 Pitch of stays 15 1/4 x 15 1/4 How are stays secured Same as Nuts & Washers Working pressure by rules F. 216 Material of stays Steel

AREA at smallest part 6.23 Area supported by each stay Working pressure by rules Material of Front plates at bottom Steel

Thickness 7/8 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 15 x 12 3/4 Working pressure of plate by rules 37 1/2

Diameter of tubes 2 1/2 Pitch of tubes 3 1/4 x 3 1/4 Material of tube plates Steel Thickness: Front 7/8 Back 3/4 Mean pitch of stays 7 1/2 x 7 1/8

Pitch across wide water spaces 13 Working pressures by rules 331 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 1/2 x 1 1/2 Length as per rule 2-3 1/4 Distance apart 7 1/8 Number and pitch of stays in each 3-7 1/8 x 7 1/8

Working pressure by rules 231 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 Report also sent on the Hull of the Ship? If not, state whether, and when, one will be sent.



Rpt. 9.
 Repo
 Date of certificate
 No. in Reg. Book.
 Tonnage
 Registered Horse Power
 No. of Main Boilers
 No. of Donkey Steam Pressure in Main Boilers
 in Donkey Boilers
 Last Reported Particulars
 (Periodical Return of Register)

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 _____

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: *Two each of top & bottom end & main bearing bolts, a set of coupling bolts, a set of feed & bilge pump valves, piston rings, propeller shaft, air pump rod, bolts & nuts, plain & screwed bars etc.*

The foregoing is a correct description,
A. & J. INGLIS LIMITED,
 William Booth, Secy. Manufacturers. Makers.

Dates of Survey while building
 During progress of work in shops --- 1914 1915 Dec 18-1914 Jan 7-8-14-16-19-20-21-28 Feb 6-17-18-23-25-26 Mar 3-9-11-24-25-27 Apr 2-8-9
 During erection on board vessel --- 15-22-24-30 May 1-4-5-21-25 June 1-23-25 July 3-9 Aug 5-28 Sept 3-17-23 Oct 5-15-16-19-22-26 Nov 5-27
 Total No. of visits 51

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

Dates of Examination of principal parts—Cylinders 25-5-14 Slides 25-5-14 Covers 25-5-14 Pistons 25-5-14 Rods 25-5-14
 Connecting rods 25-5-14 Crank shaft 24-4-14 Thrust shaft 25-3-14 Tunnel shafts 9-4-14 Screw shaft 9-4-14 Propeller 3-9-14
 Stern tubes 24-4-14 Steam pipes tested 16-10-14 Engine and boiler seatings 26-10-14 Engines holding down bolts 26-10-14
 Completion of pumping arrangements 22-10-14 Boilers fixed 26-10-14 Engines tried under steam 24-11-14.
 Main boiler safety valves adjusted 5-11-14 Thickness of adjusting washers *Eda 7/16 - 3/8 Pat 7/16 - 13/32*
 Material of Crank shaft *Steel* Identification Mark on Do. *P.T.B* Material of Thrust shaft *Steel* Identification Mark on Do. *P.T.B*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *P.T.B* Material of Screw shafts *Steel* Identification Marks on Do. *F.A.F.*
 Material of Steam Pipes *Copper* Test pressure *430 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Machinery has been built under special survey in accordance with the approved plans, securely fitted on board and tried under steam with satisfactory results. The workmanship and materials are of good quality throughout, and the case is eligible in our opinion for the notation + class. 11/14.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 11.14. F.D.

J.W.D. 10/12/14
J.P.R.

The amount of Entry Fee .. £ 7 : 0 : 0 When applied for, _____
 Special .. £ 23 : 5 : 0 7/12/1914
 Donkey Boiler Fee .. £ ✓ : : When received, _____
 Travelling Expenses (if any) £ ✓ : : _____

Thos. A. Sturgeon & Co. Ritchie,
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW 8-DEC-1914**

Assigned + L.M.C. 11.14
J.D.

MACHINERY CERTIFICATE

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