

REPORT ON MACHINERY.

NEWCASTLE-ON-TYNE.

No. 25806

63930

Date of writing Report 23-1-13 When handed in at Local Office Port of Hull Received at London Office FRI. JAN. 24 1913

No. in Survey held at Hull Date, First Survey Feb. 16th Last Survey Jan. 17 1913.

Reg. Book. upt 55 on the Steel screw steamer "Harpley" "CLAN MACKELLAR" (Number of Visits 79) Tons { Gross 4863 Net 3108

Master By whom built Newcastle Northumberland S.B. Co. Ltd When built 1913

Engines made at Hull By whom made Earle's Co. Ltd when made 1913

Boilers made at Hull By whom made Earle's Co. Ltd when made 1913

Registered Horse Power Owners J.G. Harrison Ltd Port belonging to London

Nom. Horse Power as per Section 28 601 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 Three

Dia. of Cylinders 28"-46 1/2"-78" Length of Stroke 54" Revs. per minute 65 Dia. of Screw shaft as per rule 16.16" Material of steel
 as fitted 17 3/4" 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 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 yes If two
 liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 71"

Dia. of Tunnel shaft as per rule 14.8" Dia. of Crank shaft journals as per rule 15.5 1/4" Dia. of Crank pin 15 5/8" Size of Crank webs 23x10" Dia. of thrust shaft under
 collars 15 5/8" Dia. of screw 19'-0" Pitch of Screw 19'-0" No. of Blades 4 State whether moveable yes Total surface 1034"

No. of Feed pumps two Diameter of ditto 4 1/8" Stroke 30" Can one be overhauled while the other is at work yes

No. of Bilge pumps two Diameter of ditto 4 1/2" Stroke 30" Can one be overhauled while the other is at work yes

No. of Donkey Engines three Sizes of Pumps two 9" 5/8" x 10" dup 10" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room four 3 1/2" one 2 1/2" in tunnel well two 2 1/2" In Holds, &c. 2 of 3 1/2" dia in each
hold & 2 of 3 1/2" in deep tank

No. of Bilge Injections one size 6" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size yes 3 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 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 Forward suction How are they protected wood 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 26-11-12 of Stern Tube 24-12-12 Screw shaft and Propeller 31-12-12

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record no) Manufacturers of Steel A. Colville Sons

Total Heating Surface of Boilers 8340^{sq} Is Forced Draft fitted yes No. and Description of Boilers Three single ended

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 17-12-12 No. of Certificate 1951

Can each boiler be worked separately yes Area of fire grate in each boiler 62.5^{sq} No. and Description of Safety Valves to
 each boiler two spring loaded Area of each valve 7.07^{sq} Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 3'-0" Mean dia. of boilers 18 1/2" Length 12'-0" Material of shell plates steel

Thickness 1 1/2" Range of tensile strength 29-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
 long. seams J.R.D.B. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/4" Lap of plates or width of butt straps 22 1/8"

Per centages of strength of longitudinal joint rivets 85.6 Working pressure of shell by rules 235 lbs Size of manhole in shell 12" x 16"
 plate 85.3

Size of compensating ring 9 1/2" x 1 1/2" No. and Description of Furnaces in each boiler 3 Deighton Material steel Outside diameter 46 3/4"

Length of plain part top Thickness of plates bottom 7 3/32" Description of longitudinal joint welded No. of strengthening rings yes

Working pressure of furnace by the rules 228 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 1 1/16" Top 1 1/16" Bottom 15/16"

Pitch of stays to ditto: Sides 8 1/2" x 9" Back 7 3/4" x 7 3/8" 8 3/4" x 7 3/8" stays are fitted with nuts or riveted heads nuts Working pressure by rules 235

Material of stays iron Diameter at smallest part 1.76 Area supported by each stay 59^{sq} Working pressure by rules 200 End plates in steam space:
Material steel Thickness 1 3/16" Pitch of stays 17 1/2" x 15" How are stays secured D. N. Working pressure by rules 238 Material of stays steel 26-30

Diameter at smallest part 6.23 Area supported by each stay 262.5^{sq} Working pressure by rules 229 Material of Front plates at bottom steel
 Thickness 15/16" Material of Lower back plate steel Thickness 15/16" Greatest pitch of stays 16 3/4" x 7" Working pressure of plate by rules 200

Diameter of tubes 2 1/2" Pitch of tubes 3 3/8" x 3 3/4" Material of tube plates steel Thickness: Front 19/16" Back 7/8" Mean pitch of stays 7 7/8"

Pitch across wide water spaces 13" Working pressures by rules 226 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 9 1/2" x 1 1/2" Length as per rule 32 9/16" Distance apart 8 3/4" Number and pitch of stays in each three 7 7/8"

Working pressure by rules 204 Superheater or Steam chest; how connected to boiler yes Can the superheater be shut off and the boiler worked
 separately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet
 holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes

If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes

Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

Lloyd's Register
 Foundation
 W531-0235

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure tested by hydraulic pressure _____ 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 casing 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 _____
 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 top end bolts & nuts, Two bottom end bolts & nuts, Two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of feed & bilge pump valves, 1/2 set of air & circulating pump valves, one set of H.P. piston springs, Two propeller blades, one safety valve spring, 3 condenser tubes, 6 boiler tubes, 6 cyl cover studs, 6 packing bolts & nuts, one main check valve, a quantity of iron bolts & nuts of various sizes.
 One propeller shaft mark 2269 Th. B.
 The foregoing is a correct description,
 J. S. Salethorpe Manufacturer.

SECRETARY: 1912: Feb. 16, 26, Mar. 5, 8, 21, 27, Apr. 4, 10, 19, May 1, 7, 15, 23, 31, Jun. 1, 4, 11, 18, 25, 30, Jul. 7, 14, 21, 28, Aug. 5, 12, 19, 26, 31, Sep. 2, 9, 16, 23, 30, Oct. 7, 14, 21, 28, Nov. 4, 11, 18, 25, 30, Dec. 6, 13, 20, 27, 31, 1913: Jan. 2, 9, 16, 23, 30, Feb. 6, 13, 20, 27, 28, Mar. 6, 13, 20, 27, 28, Apr. 3, 10, 17, 24, 31, May 7, 14, 21, 28, Jun. 4, 11, 18, 25, 30, Jul. 2, 9, 16, 23, 30, Aug. 6, 13, 20, 27, 31, Sep. 3, 10, 17, 24, 31, Oct. 7, 14, 21, 28, Nov. 4, 11, 18, 25, 30, Dec. 7, 14, 21, 28, 31.

Dates of Survey while building: During progress of work in shops -- (at rule) Nov 26, Jan 30, Feb 27, Mar 7, 14, 21, 28, Apr 4, 11, 18, 25, 30, May 7, 14, 21, 28, Jun 4, 11, 18, 25, 30, Jul 2, 9, 16, 23, 30, Aug 6, 13, 20, 27, 31, Sep 3, 10, 17, 24, 31, Oct 7, 14, 21, 28, 31, Nov 4, 11, 18, 25, 30, Dec 7, 14, 21, 28, 31.

Total No. of visits 49.

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 7-10-12 Slides 7-10-12 Covers 7-10-12 Pistons 6-11-12 Rods 6-11-12
 Connecting rods 6-11-12 Crank shaft 7-10-12 Thrust shaft 27-11-12 Tunnel shafts 2-1-13 Screw shaft 10-12-12 Propeller 10-12-12
 Stern tube 25-11-12 Steam pipes tested 10/11-1-13 Engine and boiler seatings 24-12-13 Engines holding down bolts 9-1-13
 Completion of pumping arrangements 11-1-13 Boilers fixed 9-1-13 Engines tried under steam at morning 11-1-13
 Main boiler safety valves adjusted 11-1-13 Thickness of adjusting washers Lt, P 5 1/16. St, P 5 1/32. P 5 P 1/16 S
 Material of Crank shaft Steel Identification Mark on Do. 5240AB Material of Thrust shaft Steel Identification Mark on Do. 2989W
 Material of Tunnel shafts Steel Identification Marks on Do. 2989WD Material of Screw shafts Steel Identification Marks on Do. 2266
 Material of Steam Pipes Solid drawn steel Test pressure 100 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery for this vessel has been constructed under special survey, in accordance with the approved plans & rules of this Society, the materials & workmanship are good. The boilers have been tested by hydraulic pressure to 400 lbs found sound & tight. The engines & boilers have been properly fitted & secured on board & the safety valves adjusted under steam. In my opinion the vessel will be eligible for the record & L.M.C. with date when the survey has been completed.

To complete the survey the Donkey boiler requires to be secured in place, the mounting completed & reconnected up, and its safety valves adjusted, the main engines require to be tried under full power, the main boiler safety valves tested for accumulation & the water tight door to tunnel tested.
 The donkey boiler has been secured & its safety valves adjusted, the main engines have been tried under full power, main safety valves tested for accumulation & tunnel door tested; record of survey L.M.C 3, 13

The amount of Entry Fee .. £ 3 : 0 : _____ When applied for, _____
 Special £ 50 : 1 : _____ 23-1-1913
 Donkey Boiler Fee £ : : _____ When received, _____
 Travelling Expenses (if any) £ : : _____ 4/4/13

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

Committee's Minute FRI. MAR 28 1913
 Assigned + L.M.C 3, 13

