

# REPORT ON MACHINERY.

Port of Newcastle & Leith

Received at London WED. APR 9 1902

No. in Survey held at Leith Date, first Survey Aug 25 '99 Last Survey June 19 1900

Book on the S.S. "Abercrombie" at Leith Aug 20 1900 (Number of Visits 23)

Master W. Sinton Built at Sunderland By whom built Sunderland Shipbuilders Co When built 1902

Motors made at Leith By whom made John Grant & Co when made 1902

Motors made at South Shields By whom made Jos. T. Eltringham & Co when made 1900

Registered Horse Power 67 Owners Balgay Shipping Co (Ings) Port belonging to Sunderland

Net Horse Power as per Section 28 67 Is Refrigerating Machinery fitted No Is Electric Light fitted No

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

No. of Cylinders 13-21 1/2-35 Length of Stroke 24 Revs. per minute 110 Dia. of Screw shaft 7 1/2 Lgth. of stern bush 30

Dia. of Tunnel shaft 6 5/8 Dia. of Crank shaft journals 6 3/4 Dia. of Crank pin 6 3/4 Size of Crank webs 13 1/2 x 5 1/4 Dia. of thrust shaft under

Stroke 6 3/4 Dia. of screw 8' 6" Pitch of screw 11' 0" No. of blades 4 State whether moveable No Total surface 26 sq

No. of Feed pumps 1 Diameter of ditto 2 3/4 Stroke 12 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 Diameter of ditto 2 3/4 Stroke 12 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 4 1/2 x 2 1/2 x 5 x 6 x 8 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Two 2' In Holds, &c. Two 2'

Bilge injections 1 sizes 3 1/2 Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes 2'

Are 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 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

How are they protected 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

Were stern tube, propeller, screw shaft, and all connections examined in dry dock None Is the screw shaft tunnel watertight None

Is it fitted with a watertight door Yes worked from Yes

**BOILERS, &c.**— (Letter for record S) Total Heating Surface of Boilers 1073 sq Is forced draft fitted No

Description of Boilers One Single ended Multitubular Working Pressure 780 Tested by hydraulic pressure to 360

Can each boiler be worked separately Yes Area of fire grate in each boiler 34 sq No. and Description of safety valves to

Area of each valve 4.90 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

Mean dia. of boilers 11-11" Length 9-10 Material of shell plates S

Range of tensile strength 27/32 Are they welded or flanged No Descrip. of riveting: cir. seams Lap J.R. long. seams J.B. 3.R.

Pitch of rivets 7" Lap of plates or width of butt straps 17 1/2"

Working pressure of shell by rules 210 Size of manhole in shell 16 x 12

No. and Description of Furnaces in each boiler 2 Holman pat. Material S. Outside diameter 46 1/2 x 42 1/2

Thickness of plates 23/32 Description of longitudinal joint Weld No. of strengthening rings Yes

Combustion chamber plates: Material St. Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 1"

Working pressure by rules 208

Diameter at smallest part 1 17/32 Area supported by each stay 72 Working pressure by rules 246 End plates in steam space:

Working pressure by rules 236 Material of stays S

Area supported by each stay 221 Working pressure by rules 207 Material of Front plates at bottom S

Greatest pitch of stays 14" Working pressure of plate by rules 206

Material of tube plates S Thickness: Front 1/16 Back 27/32 Mean pitch of stays 13 1/2

Working pressures by rules 207 Girders to Chamber tops: Material S Depth and

Distance apart 8 1/4 Number and pitch of Stays in each 2 x 8 3/4

Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

Material of longitudinal joint Weld Diam. of rivet 3/16

Material of flue plates St. Thickness 2019

End plates: Thickness 1/16 How stayed None

Area of safety valves to superheater None Are they fitted with easing gear None

Original Survey letter  
see surveyors letter  
10.4.02  
R.L.

W498-0259



**DONKEY BOILER**— No. 1 Description *vertical with cross tubes*  
 Made at *Leith* By whom made *John Cran & Co* When made *13/2/02* Where fixed *Stokehold*  
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *5-13* Fire grate area *12 sq* Description of safety valves *Spring*  
 No. of safety valves *1* Area of each *7.07 sq* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *yes* If steam from main boiler  
 enter the donkey boiler *no* Dia. of donkey boiler *5' 0"* Length *10' 0"* Material of shell plates *Steel* Thickness *7/16* Range of thickness  
 strength *27/32* Descrip. of riveting long. seams *Lap* Rivets *91.1* Thickness of shell crown plates *1/2"* Radius of do. *5' 9"* No. of Stays to do. *4*  
 Lap of plating *3 3/4"* Per centage of strength of joint *70.4* Thickness of shell plates *1/2"* Radius of do. *5' 9"* No. of Stays to do. *4*  
 Dia. of stays. *1 3/8"* Diameter of furnace Top *44 1/4"* Bottom *50 1/2"* Length of furnace *54"* Thickness of furnace plates *7/32"* Descrip.  
 joint *Lap* Thickness of furnace crown plates *9/16"* Stayed by *as above* Working pressure of shell by rules *110 lbs*  
 Working pressure of furnace by rules *109 lbs* Diameter of uptake *12"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *two top end two bottom end, two main-bearing, + nuts, a set of coupling bolts, a set of feed + bilge pump valves, a main safety valve spring, a quantity of assorted bolts + nuts + rivets*

The foregoing is a correct description,  
*John T. Edburgham Esq* Manufacturers of Boilers -

Dates of Survey while building  
 During progress of work in shops: 1899 Aug. 25, Sep. 6, 12, 18, 21, 29, Oct. 6, 10, 12, 17, 26, Nov. 1, 9, 10, 21, 24, Dec. 7, 12, 15, 1900 Jan. 9, 18, 21, 29, Feb. 13, 20, 27, Mar. 7, 14, 21, 28, Apr. 4, 11, 18, 25, May 2, 9, 16, 23, June 6, 13, 20, 27, July 4, 11, 18, 25, Aug. 1, 8, 15, 22, 29, Sept. 5, 12, 19, 26, Oct. 3, 10, 17, 24, Nov. 7, 14, 21, 28, Dec. 5, 12, 19, 26, 1901 Jan. 2, 9, 16, 23, Feb. 6, 13, 20, 27, Mar. 6, 13, 20, 27, Apr. 3, 10, 17, 24, May 1, 8, 15, 22, June 5, 12, 19, 26, July 3, 10, 17, 24, Aug. 7, 14, 21, 28, Sept. 4, 11, 18, 25, Oct. 2, 9, 16, 23, Nov. 6, 13, 20, 27, Dec. 4, 11, 18, 25, 1902 Jan. 1, 8, 15, 22, Feb. 5, 12, 19, 26, Mar. 5, 12, 19, 26, Apr. 2, 9, 16, 23, May 6, 13, 20, 27, June 4, 11, 18, 25, July 2, 9, 16, 23, Aug. 6, 13, 20, 27, Sept. 3, 10, 17, 24, Oct. 1, 8, 15, 22, Nov. 5, 12, 19, 26, Dec. 3, 10, 17, 24, 1903 Jan. 7, 14, 21, 28, Feb. 4, 11, 18, 25, Mar. 4, 11, 18, 25, Apr. 1, 8, 15, 22, May 5, 12, 19, 26, June 2, 9, 16, 23, July 6, 13, 20, 27, Aug. 3, 10, 17, 24, Sept. 7, 14, 21, 28, Oct. 5, 12, 19, 26, Nov. 2, 9, 16, 23, Dec. 6, 13, 20, 27, 1904 Jan. 3, 10, 17, 24, Feb. 7, 14, 21, 28, Mar. 6, 13, 20, 27, Apr. 3, 10, 17, 24, May 7, 14, 21, 28, June 4, 11, 18, 25, July 8, 15, 22, 29, Aug. 5, 12, 19, 26, Sept. 9, 16, 23, 30, Oct. 7, 14, 21, 28, Nov. 4, 11, 18, 25, Dec. 8, 15, 22, 29, 1905 Jan. 5, 12, 19, 26, Feb. 9, 16, 23, 30, Mar. 8, 15, 22, 29, Apr. 5, 12, 19, 26, May 9, 16, 23, 30, June 6, 13, 20, 27, July 10, 17, 24, 31, Aug. 7, 14, 21, 28, Sept. 11, 18, 25, 30, Oct. 9, 16, 23, 30, Nov. 6, 13, 20, 27, Dec. 10, 17, 24, 31, 1906 Jan. 7, 14, 21, 28, Feb. 11, 18, 25, 30, Mar. 10, 17, 24, 31, Apr. 7, 14, 21, 28, May 11, 18, 25, 30, June 8, 15, 22, 29, July 12, 19, 26, 31, Aug. 9, 16, 23, 30, Sept. 13, 20, 27, 30, Oct. 11, 18, 25, 31, Nov. 8, 15, 22, 29, Dec. 12, 19, 26, 31, 1907 Jan. 9, 16, 23, 30, Feb. 13, 20, 27, 30, Mar. 12, 19, 26, 31, Apr. 9, 16, 23, 30, May 13, 20, 27, 30, June 10, 17, 24, 31, July 14, 21, 28, 31, 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31, 31, July 22, 29, 30, 31, Aug. 19, 26, 31, 31, Sept. 23, 30, 31, 31, Oct. 21, 28, 31, 31, Nov. 18, 25, 30, 31, Dec. 22, 29, 31, 31, 1912 Jan. 19, 26, 31, 31, Feb. 23, 30, 31, 31, Mar. 22, 29, 31, 31, Apr. 19, 26, 31, 31, May 23, 30, 31, 31, June 20, 27, 31, 31, July 24, 31, 31, 31, Aug. 21, 28, 30, 31, Sept. 25, 30, 31, 31, Oct. 23, 30, 31, 31, Nov. 20, 27, 30, 31, Dec. 24, 31, 31, 31, 1913 Jan. 21, 28, 31, 31, Feb. 25, 30, 31, 31, Mar. 24, 31, 31, 31, Apr. 21, 28, 31, 31, May 25, 31, 31, 31, June 22, 29, 30, 31, July 26, 31, 31, 31, Aug. 23, 30, 31, 31, Sept. 27, 30, 31, 31, Oct. 25, 31, 31, 31, Nov. 22, 29, 30, 31, Dec. 26, 31, 31, 31, 1914 Jan. 23, 30, 31, 31, Feb. 27, 30, 31, 31, Mar. 26, 31, 31, 31, Apr. 23, 30, 31, 31, May 27, 31, 31, 31, June 24, 31, 31, 31, July 28, 31, 31, 31, Aug. 25, 31, 31, 31, Sept. 29, 30, 31, 31, Oct. 27, 31, 31, 31, Nov. 24, 31, 31, 31, Dec. 28, 31, 31, 31, 1915 Jan. 25, 31, 31, 31, Feb. 29, 30, 31, 31, Mar. 28, 31, 31, 31, Apr. 25, 31, 31, 31, May 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