

REPORT ON MACHINERY.

No. 23166

Port of Glasgow

Received at London Office JUL 17 OCT 1905

No. in Survey held at Glasgow

Date, first Survey 10th July Last Survey 11th Oct 1905

Reg. Book.

(Number of Visits 11)

on the S.S. "Apuica"

Master

Built at Manxport

By whom built W. Walker

Tons ^{Gross}
_{Net}

When built 1903

Engines made at Glasgow

By whom made Hulson & Sons Ltd

when made 1905

Boilers made at do

By whom made do

when made 1905

Registered Horse Power

Owners Aden Steam Shipping Co Ltd

Port belonging to London

Nom. Horse Power as per Section 28 77

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 13 1/2 - 21 1/2 - 34 1/2

Length of Stroke 27"

Revs. per minute 115

Dia. of Screw shaft 7 3/4"

Material of screw shaft 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 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 no

If two

liners are fitted, is the shaft lapped or protected between the liners no

Length of stern bush 2-7"

Dia. of Tunnel shaft 6 3/4"

Dia. of Crank shaft journals 6 3/4"

Dia. of Crank pin 7"

Size of Crank webs 4 3/4"

Dia. of thrust shaft under

collars 7"

Dia. of screw 9-6"

Pitch of screw 10-0"

No. of blades 4

State whether moveable no

Total surface 30 #

No. of Feed pumps 2

Diameter of ditto 2 1/2"

Stroke 13 1/2"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 2 1/2"

Stroke 13 1/2"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3

Sizes of Pumps 6x5 3/4x6; 4 1/2x2 3/4x6

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

In Engine Room 2 - 2 1/4"

In Holds, &c. 2 - 2"

No. of bilge injections 1 sizes 3 1/2"

Connected to condenser, or to circulating pump no

Is a separate donkey suction fitted in Engine room & size Yes 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 Four Suctions

How are they protected Wood covering

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launch Is the screw shaft tunnel watertight no

Is it fitted with a watertight door no worked from no

BOILERS, &c.—No. of Certificate 7660 (Letter for record (S))

Total Heating Surface of Boilers 1383 # Is forced draft fitted no

No. and Description of Boilers One Single Ended

Working Pressure 160

Tested by hydraulic pressure to 320 lbs

Date of test 2/9/05 Can each boiler be worked separately no

Area of fire grate in each boiler 47 #

No. and Description of safety valves to

each boiler 2 Spring loaded

Area of each valve 5.9"

Pressure to which they are adjusted 165 lbs

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork Width of stokehold

Mean dia. of boilers 12-6"

Length 10-0"

Material of shell plates stl

Thickness 1"

Range of tensile strength 27 lbs

Are they welded or flanged no

Descrip. of riveting: cir. seams D. R. L.

long. seams D. B. S.

Diameter of rivet holes in long. seams 1 1/16"

Pitch of rivets 7 1/2"

Lap of plates or width of butt straps 15 7/8"

Per centages of strength of longitudinal joint

rivets 87.96

plate 83.83

Working pressure of shell by rules 168 lbs

Size of manhole in shell 16x12

Size of compensating ring 31x27x1

No. and Description of Furnaces in each boiler 3 plain

Material stl

Outside diameter 39"

Length of plain part 7 1/2"

Thickness of plates 1 1/16"

Description of longitudinal joint weld

No. of strengthening rings no

Working pressure of furnace by the rules 171

Combustion chamber plates: Material stl

Thickness: Sides 9/16"

Back 9/16"

Top 9/16"

Bottom 7/8"

Pitch of stays to ditto: Sides 8x8

Back 8x8 1/2

Top 8 1/2x8

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 160

Material of stays stl

Diameter at smallest part 1.45"

Area supported by each stay 68"

Working pressure by rules 170

End plates in steam space:

Material stl

Thickness 15/16"

Pitch of stays 16x16

How are stays secured D. nuts

Working pressure by rules 164"

Material of stays stl

Diameter at smallest part 4.1"

Area supported by each stay 256"

Working pressure by rules 160

Material of Front plates at bottom stl

Thickness 3/4"

Material of Lower back plate stl

Thickness 9/8"

Greatest pitch of stays 13 7/8"

Working pressure of plate by rules 180

Diameter of tubes 3 1/2"

Pitch of tubes 4 3/4"

Material of tube plates stl

Thickness: Front 3/4"

Back 3/4"

Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14 1/2"

Working pressures by rules 180 lbs

Girders to Chamber tops: Material stl

Depth and

thickness of girder at centre 7 1/2x3 1/4x2

Length as per rule 30"

Distance apart 8"

Number and pitch of Stays in each 2 - 8 1/2"

Working pressure by rules 160 lbs

Superheater or Steam chest; how connected to boiler no

Can the superheater be shut off and the boiler worked

separately no

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

DONKEY BOILER— No. 1 Description Vertical, 2 cross tubes
 Made at Stockton By whom made Riley Bros. Date of test 1.9.05 Where fixed Stockton
 Working pressure 80 tested by hydraulic pressure to 1600 No. of Certificate 3504 Fire grate area 12 Description of safety valves Spring loaded
 No. of safety valves 1 Area of each 7 Pressure to which they are adjusted 83 lbs If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 4-9 Length 9-6 Material of shell plates steel Thickness 3/8 Range of tensile strength 27/32 Descrip. of riveting long. seams R. R. Lap Dia. of rivet holes 13/16 Whether punched or drilled drilled Pitch of rivets 2 3/16
 Lap of plating H 1/4 Per centage of strength of joint Rivets 23.7 Thickness of shell crown plates 19/32 Radius of do. 5 ft No. of Stays to do. 5
 Dia. of stays. 1 1/2 Diameter of furnace Top 3-8 1/4 Bottom 4-2 1/4 Length of furnace 4-2 1/2 Thickness of furnace plates 1/2 Description of joint Riv. S. L. Thickness of furnace crown plates 19/32 Stayed by as above Working pressure of shell by rules 97 lbs
 Working pressure of furnace by rules 99 lbs Diameter of uptake 11 Thickness of uptake plates 17/16 Thickness of water tubes 3/8

SPARE GEAR. State the articles supplied:— Propeller, propeller shaft, feed & bilge pumps
valves & the bolts & nuts required by the Rules.

The foregoing is a correct description,

Manufacturer.

HUTSON & SONS

Wm. Fairbairn

Dates of Survey while building
 During progress of work in shops— 1905 July 10 Aug 8 14 16 22 Sept 2 5
 During erection on board vessel— 1905 Sept 15 20 29 Oct 11
 Total No. of visits 11

Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " No

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

The engines & boilers of this vessel have been constructed under special survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible for notation * L M C 10.05 in the Register-Book.

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 10.05

18.10.05

Certificate (if required) to be sent to...

The amount of Entry Fee... £ : : :
 Special £ 11 : : :
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : 0 : 6

When applied for, 16 OCT 1905
 When received, 20 OCT 1905

H Gardner-Smith
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned L.M.C. 10.05
 (Subject to classification of hull)

TUES. 24 OCT 1905



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