

REPORT ON MACHINERY.

BOX CASE

5716

(Received at London Office

22nd FEB, 83

Survey held at *Middlesbrough & Stockton* Date, first Survey *16 June 1882* East Survey *16 February 1883*

on the *S.S. Ybarra No 11* Tons *1442*

By *Otero* Built at *Middlesbrough* When built *1882-3*

By whom made *Blair & Co (Sd)* when made *1882-3*

By whom made _____ when made *1882-3*

Registered Horse Power *200* Owners *Ybarra, Hermanos - Co* Port belonging to *Bilbao*

Engines, &c. —

Number of Engines *Compound, Reversed, Surface Condensing*

Number of Cylinders *38-71* Length of Stroke *45* No. of Rev. per minute *60* Point of Cut off, High Pressure *1/4* Low Pressure *1/2*

Diameter of Screw shaft *13 3/4* Diameter of Tunnel shaft *12 3/4* Diameter of Crank shaft journals *13* Diameter of Crank pin *13 1/2* size of Crank webs *18 1/2 x 10*

Number of screw *16 ft* Pitch of screw *17 ft* No. of blades *4* state whether moveable *not* total surface *not ascendant*

Feed pumps *Two* diameter of ditto *4 1/4* Stroke *33* Can one be overhauled while the other is at work *yes*

Bilge pumps *Two* diameter of ditto *4 1/4* Stroke *33* Can one be overhauled while the other is at work *yes*

Do they pump from *Ballast Tanks, Engine Room & after well.*

Donkey Engines *Two* *drum* acting *Size of Pumps 7 1/2 dia x 9 stroke* Where do they pump from *Large pump from ballast tanks*

Small do from sea hot well & ballast tanks.

Are the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*

Are bilge injections *One* and sizes *6" dia* Are they connected to condensers or to circulating pump *circulating pump*

Are the pumps worked *by levers connected to piston rod & crosshead of after engine.*

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 *Below*

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*

Are pipes carried through the bunkers *none* How are they protected *—*

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*

Were stern tube, propeller, screw shaft, and all connections examined in dry dock *New vessel*

Is screw shaft tunnel watertight *Said to be so* and fitted with a sluice door *Yes* worked from *Top platform in engine room*

Boilers, &c. —

Number of Boilers *Two* Description *Cylindrical, Muller's tubular, fitted from both ends.*

Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *29-12-82*

Description of superheating apparatus or steam chest *Cylindrical, vertical, constructed at work.*

Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *No superheated*

Area of fire grate surface in each boiler *48* Description of safety valves *Spring loaded by Blair & Co (Sd)*

Area of each valve *15.9 sq ft* Are they fitted with easing gear *yes*

Are safety valves to superheater *—* area of each valve *—* are they fitted with easing gear *—*

Least distance between boilers and bunkers or woodwork *About 12"*

Number of boilers *2-0* Length of boilers *14 ft* description of riveting of shell long. seams *all welded except one joint in each inner course which is closed with double butt rivets, S.P.R.* circum. seams *Co. S.P.R.*

Thickness of shell plates *1* diameter of rivet holes *1/8* whether punched or drilled *drilled* pitch of rivets *4 3/8*

Percentage of strength of longitudinal joint *71.5* working pressure of shell by rules *99.5 lbs*

Size of compensating rings *28 x 24 x 1 1/8*

Number of Furnaces in each boiler *Four* outside diameter *3-1* length, top *5-2* bottom *13.6*

Thickness of plates *top 1/2 bottom 7/16* description of joint *S.P.R. if rings are fitted ^{Bottom stiffened with L irons}* greatest length between rings *4-10*

Working pressure of furnace by the rules *108 lbs crown*

Thickness of combustion chamber plating, thickness, sides *1/2* back *—* top *9/16*

Thickness of stays to ditto *—* sides *8 x 8* back *—* top *8 x 8*

Are stays fitted with nuts or riveted heads *part-nuts, part-pinned heads* working pressure of plating by rules *107 lbs*

Working pressure of ditto by rules *136 lbs*

Thickness of plates in steam space, thickness *13/16* pitch of stays to ditto *15 1/2 x 16 1/2* how stays are secured *Nuts & washers cut & wired.*

Working pressure by rules *103.9 lbs*

Thickness of plates at bottom, thickness *13/16* diameter of stays at smallest part *2 3/8* working pressure by rules *—*

Back plates, thickness *—* greatest pitch of stays *—* working pressure by rules *—*

W467-W375



Diameter of tubes 3" pitch of tubes 4 1/4 x 4 3/8 thickness of tube plates, front 13/16 back 13/16
 How stayed Stay tubes pitch of stays 12 3/4 x 8 3/4 width of water spaces 1/4 between tubes, 5 between furnaces
 Diameter of Superheater or Steam chest 3-7 length 5-6
 Thickness of plates 1/2 description of longitudinal joint Lap Rivet diameter of rivet holes 13/16 pitch of rivets 3 3/8
 Working pressure of shell by rules 118 lb Diameter of flue thickness of plates
 If stiffened with rings distance between rings Working pressure by rules
 End plates of superheater, or steam chest; thickness 5/8 How stayed by 4 Stay, each 2 1/2 effective diam
 Superheater or steam chest; how connected to boiler by stayed with plate 7/8 thick 16 diam

DONKEY BOILER—

Description of cylindrical vessel with Furnace
 Made at Middlesbrough By whom made R. Dixon & Co when made Feb 22-1-83
 Where fixed in Hottenfield working pressure 70 lb Tested by hydraulic pressure to 140 lb No. of Certificate 8
 Fire grate area 14.6 sq ft Description of safety valves Duplex down No. of safety valves Two area of each 7.07 sq ft
 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No
 Diameter of donkey boiler 6-0 length 10-6 description of riveting Lap Rivet Lap Rivet
 thickness of shell plates 1/2 diameter of rivet holes 13/16 whether punched or drilled Punched
 pitch of rivets 2 1/2 lap of plating 4 1/8 per centage of strength of joint 67.4
 thickness of crown plates 9/16 stayed by Six Stay, each 1 1/2 effective diam
 Diameter of furnace, top 5 1/2 bottom 6 1/4 length of furnace 5-0
 thickness of plates 9/16 description of joint Lap Single riveted
 thickness of furnace crown plates 9/16 stayed by as Shell Crown
 Working pressure of shell by rules 71 lb working pressure of furnace by rules 74.3 lb
 diameter of uptake 13" thickness of plates 3/8 thickness of water tubes 3/8

The foregoing is a correct description,

R. Dixon & Co
 Manufacturers of Main Engines & Boilers only.

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

The Machinery & Boilers of this vessel have been constructed under special
 supervision of the Surveyor & workmanship good and satisfactory.
 All internal plates of Main Boilers are of Steel, manufactured at
 the works of Messrs J & W. Bendish, Glasgow.
 The Engines and Boilers of this vessel are in good order and safe working
 condition and, in my opinion, eligible to receive the certification
 in the Register Book.

The amount of Entry Fee .. £ 3 : : received by me,
 Special .. £ 30 : :
 Certificate (if required) .. £ : : 17-2-1883.
 (Travelling Expenses, if any, £ ..)

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute Tuesday 27th February 1883.