

RECEIVED FROM SURVEYOR.

7 OCT. 89

REPORT ON MACHINERY.

3257

of LIVERPOOL.

Received at London Office
WED 9 OCT 1889
TUES 8 OCT 1889

No. in Survey held at Liverpool Date, first Survey April 16th Last Survey Sept 12th 1889
 Reg. Book. on the Master Messrs Harbey & Co of No 47. (Number of Visits 16)
 Built at _____ By whom built _____ Tons _____
 Engines made at _____ By whom made _____ When built _____
 Boilers made at Liverpool By whom made D Koller & Sons when made _____
 Registered Horse Power _____ Owners _____ when made 1889
 Port belonging to _____

ENGINES, &c.—

Description of Engines _____
 Diameter of Cylinders _____ Length of Stroke _____ No. of Rev. per minute _____ Point of Cut off, High Pressure _____ Low Pressure _____
 Diameter of Screw shaft _____ Diam. of Tunnel shaft _____ Diam. of Crank shaft journals _____ Diam. of Crank pin _____ size of Crank webs _____
 Diameter of screw _____ Pitch of screw _____ No. of blades _____ state whether moveable _____ total surface _____
 No. of Feed pumps _____ diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____
 No. of Bilge pumps _____ diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____
 Where do they pump from _____
 No. of Donkey Engines _____ Size of Pumps _____ Where do they pump from _____
 Are all the bilge suction pipes fitted with roses _____ Are the roses always accessible _____ Are the sluices on Engine room bulkheads always accessible _____
 No. of bilge injections _____ and sizes _____ Are they connected to condenser, or to circulating pump _____
 How are the pumps worked _____
 Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the discharge pipes above or below the deep water line _____
 Are they each fitted with a discharge valve always accessible on the plating of the vessel _____ Are the blow off cocks fitted with a spigot and brass covering plate _____
 What pipes are carried through the bunkers _____ How are they protected _____
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times _____
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges _____
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock _____
 Is the screw shaft tunnel watertight _____ and fitted with a sluice door _____ worked from _____

BOILERS, &c.—

Number of Boilers Two Description Cylindrical & Multitubular Whether Steel or Iron Steel
 Working Pressure 160 lb Tested by hydraulic pressure to 320 lb Date of test 18-9-89
 Description of superheating apparatus or steam chest None
 Can each boiler be worked separately _____ Can the superheater be shut off and the boiler worked separately _____
 No. of square feet of fire grate surface in each boiler _____ Description of safety valves _____ No. to each boiler _____
 Area of each valve _____ Are they fitted with casing gear _____ No. of safety valves to superheater _____ area of each valve _____
 Are they fitted with casing gear _____ Smallest distance between boilers and bunkers or woodwork _____ Diameter of boilers 13-6
 Length of boilers 10-0 description of riveting of shell long. seams Double butt strap circum. seams Lap double riv Thickness of shell plates 1 1/8
 Diameter of rivet holes 1 1/4 whether punched or drilled Drilled pitch of rivets 8 1/2 x 4 1/4 Lap of plating 13 1/2 straps
 Percentage of strength of longitudinal joint 86.5 working pressure of shell by rules 161 lb size of manholes in shell 16 x 12
 Size of compensating rings 6 1/2 x 1 1/2 No. of Furnaces in each boiler 3
 Outside diameter 8-4 1/4 length, top 6-0 bottom 6-0 thickness of plates 5/8 description of joint Welded if rings are fitted No
 Greatest length between rings _____ working pressure of furnace by the rules 199 lb combustion chamber plating, thickness, sides 5/8 back 5/8 top 5/8
 Pitch of stays to ditto, sides 8 7/8 x 8 1/2 back 8 7/8 x 8 1/2 top 8 7/8 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 166 lb Diameter of stays at smallest part 1 1/4 working pressure of ditto by rules 163 end plates in steam space, thickness 7/8
 Pitch of stays to ditto 13 7/8 x 13 7/8 how stays are secured Double riveted working pressure by rules 172 lb diameter of stays at smallest part 2 1/2 working pressure by rules _____ Front plates at bottom, thickness _____ Back plates, thickness 7/8
 Greatest pitch of stays 12 x 8 1/2 working pressure by rules 163 lb Diameter of tubes _____ pitch of tubes 4 1/4 x 4 1/4 thickness of tube plates, front 7/8 back 7/8 how stayed Stay tubes pitch of stays 9 1/2 x 9 1/2 width of water spaces 1 1/2
 Diameter of Superheater or Steam chest _____ length _____ thickness of plates _____ description of longitudinal joint _____ diam. of rivet holes _____
 Pitch of rivets _____ working pressure of shell by rules _____ 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 _____ how stayed _____
 Superheater or steam chest; how connected to boiler _____

FAL 135-0094

DONKEY BOILER—

Description _____ when made _____ where fixed _____
 Made at _____ by whom made _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ fire grate area _____ description of safety
 valves _____ No. of safety valves _____ area of each _____ if fitted with casing gear _____ if steam from main boilers can
 enter the donkey boiler _____ diameter of donkey boiler _____ length _____ description of riveting _____
 Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____
 per centage of strength of joint _____ thickness of crown plates _____ stayed by _____ description of joint _____
 Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of plates _____ working pressure of shell by rules _____
 Thickness of furnace crown plates _____ stayed by _____ thickness of plates _____ thickness of water tubes _____
 Working pressure of furnace by rules _____ diameter of uptake _____

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,
 David Rolles Sons Manufacturer. of Main boilers only.

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

These boilers have been constructed under special survey
 in Liverpool, the material and workmanship were
 found good and efficient, and when tested with
 hydraulic pressure to 320 lbs per sq inch were found tight
 and satisfactory.
 They are now shipped to Nayle (Cornwall) to be fitted on
 board the vessel building by Messrs Hawley & Co.

LLOYD'S REGISTER
 I hereby certify that the above
 consequence of the
 Chamber
 it will be my duty
 within three
 attracts from wh
 H. J.
 Manager

It is submitted that this report be considered
 satisfactory, and should be sent to the surveyors
 at Falmouth for completion. W.A. 10-10-89

The amount of Entry Fee .. £ : received by me, *
 1/3 Special fees due Liverpool 10-0-0
 Donkey Boiler Fee .. £ :
 Certificate (if required) .. £ :
 To be sent as per margin.

Geo. A. Wilner
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute LIVERPOOL. 8 OCT. 89
 Transmit to London TUES 11 FEB 1890

