

REPORT ON WATER TUBE BOILERS.

No. 51943

Received at London Office

Date of writing Report 24-8-1931 When handed in at Local Office 2-12-1931 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 24-11-30 Last Survey 26-12-1931
 Reg. Bk. 2703 on the Steel twin screw steamer "Eartha" Number of Visits 42 Gross 14304 Tons
 Master Glasgow Built at Glasgow By whom built A. Stephen Sons Ltd No 535 When built 1931
 Engines made at Glasgow By whom made A. Stephen Sons Ltd When made 1931
 Boilers made at Glasgow By whom made Yarrow & Co. Ltd. When made 1931
 Registered Horse Power 700 Owners P. & O. Steam Navigation Co. Port belonging to London

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel English Steel Corporation Ltd
 Letter for Record (S) Date of Approval of plan 31-10-30 Number and Description or Type of Boilers 4 Yarrow Working Pressure 425 lb Tested by Hydraulic Pressure to 688 lb Date of Test 5-6-31
 No. of Certificate 18972 Can each boiler be worked separately Yes Total Heating Surface of Boilers 25,200 sq ft
 Is forced draught fitted Yes Area of fire grate (coal) in each Boiler 5 Total grate area of boilers in vessel including Main and Auxiliary 5 No. and type of burners (oil) in each boiler 5 No. and description of safety valves on each boiler 1-2 "H.L. (improved?) Area of each valve 3.14 sq in Pressure to which they are adjusted 425 lb
 Are they fitted with easing gear Yes In case of donkey boilers state whether steam from main boilers can enter the donkey boiler Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork Will be less Height of Boiler 17-7 1/2 Width and Length 23-5 = 14-5 1/2
 Steam Drums:—Number in each boiler 1 Inside diameter 4-2 Material of plates Steel Thickness 1 1/16
 Range of Tensile Strength 34-38 Tons Are drum shell plates welded or flanged No Description of riveting:—
 Cir. seams D.R. long. seams Solid Diameter of rivet holes in long. seams 1 1/4 Pitch of Rivets 3 1/2
 Lap of plate or width of butt straps 1 1/4 Thickness of straps 3 1/8 Percentage strength of long. joint:—Plate 33 1/3 Rivet 33 1/3
 Diameter of tube holes in drum 1 1/4 Pitch of tube holes 3 1/8 Percentage strength of shell in way of tubes 33 1/3
 If Drum has a flat side state method of staying Yes Depth and thickness of girders at centre (if fitted) Yes Distance apart 4-2 Number and pitch of stays in each 4-2 Working pressure by rules Yes
 Steam Drum Heads or Ends:—Material Steel Thickness 1 1/8 Radius or how stayed 4-2
 Size of Manhole or Handhole 16 x 12 Water Drums:—Number in each boiler 3 Inside Diameter 23
 Material of plates Steel Thickness 1 1/8 Range of tensile strength 28/32 Tons Are drum shell plates welded or flanged No
 Description of riveting:—Cir. seams D.R. long. seams Yes Diameter of Rivet Holes in long. seams 1 1/4 Pitch of rivets 3 1/2 Lap of plates or width of butt straps 1 1/4 Thickness of straps 3 1/8
 Percentage strength of long. joint:—Plate 33 1/3 Rivet 33 1/3 Diameter of tube holes in drum 2 1/4 Pitch of tube holes 3 1/8
 Percentage strength of drum shell in way of tubes 33 1/3 Water Drum Heads or Ends:—Material Steel Thickness 1 1/8
 Radius or how stayed 2 1/2 Size of manhole or handhole 16 x 12 Headers or Sections:—Number 1
 Material Steel Thickness 1 1/8 Tested by Hydraulic Pressure to 688 lb Material of Stays Steel
 Area at smallest part Yes Area supported by each stay Yes Working Pressure by Rules Yes Tubes:—Diameter 2 1/8
 Thickness 1 1/8 Number 1 Steam Dome or Collector:—Description of Joint to Shell Yes
 Percentage strength of Joint Yes Diameter Yes Thickness of shell plates Yes Material Yes
 Description of longitudinal joint Yes Diameter of Rivet Holes Yes Pitch of Rivets Yes Working Pressure of shell by Rules Yes
 Crown or End Plates:—Material Yes Thickness Yes How stayed Yes

SUPERHEATER. Type Yarrow Date of Approval of Plan 31-10-30 Tested by Hydraulic Pressure to 688 lb
 Date of Test 14/5/31 and 5/6/31 Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler Yes
 Diameter of Safety Valve 2 1/2 "dble-H.L. (improved?) Pressure to which each is adjusted Yes Is easing gear fitted Yes
 Is a drain cock or valve fitted at lowest point of superheater Yes Number, diameter, and thickness of tubes 286 - 1 1/8 9 L.S.G.
 Spare Gear. Tubes Yes Gaskets or joints:—Manhole Yes Handhole Yes Handhole plates Yes

The foregoing is a correct description, Yarrow & Co. Ltd Glasgow Manufacturer.

Dates of Survey: During progress of work in shops 1930 Nov. 24 Dec. 16-19 23 (1931) Jan. 15-27 Feb. 18-24 Is the approved plan Yes
 while building: During erection on board vessel Mar. 2-9-11-16-20-24-30 Apr. 2-9-10 May 6-12-14-19 Total No. of visits 42
25-26 June 1-2-15-16-25-29 July 10-14 Aug 6-11-14 18-20 31 Sep 25 Oct 1-9 Nov 26

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
 These boilers have been built under Special Survey, to approved plans in accordance with the Rule Requirements. Material and workmanship good. They are to be forwarded to W. Stephens at Linthouse, for fitting in their No 535. They have efficiently been in position on board. Safety valves adjusted & boiler examined under steam.

Survey Fee £ 96/10/0 When applied for 3/12/31
 Travelling Expenses (if any) £ When received 18.1. 1932
H. Luthers & J. G. Brown
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 8-DEC 1931
 Assigned SEE ACCOMPANYING MACHINERY REPORT.