

# REPORT ON WATER TUBE BOILERS.

No. 51945

Received at London Office

Date of writing Report 24-7-1931 When handed in at Local Office 2-12-1931 Port of Glasgow DEC 1931

No. in Survey held at Glasgow Date, First Survey 24-11-30 Last Survey 26-11-31  
 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 \_\_\_\_\_ 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  
 Are they forced draught fitted Yes Area of fire grate (coal) in each Boiler \_\_\_\_\_ Total grate area of boilers in vessel including Main and Auxiliary \_\_\_\_\_  
 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 \_\_\_\_\_  
 Smallest distance between boilers or uptakes and bunkers or woodwork Will blow Height of Boiler 17-7/2" Width and Length 23-5" = 14-5/2"  
 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 \_\_\_\_\_ Pitch of Rivets \_\_\_\_\_  
 Lap of plate or width of butt straps \_\_\_\_\_ Thickness of straps \_\_\_\_\_ Percentage strength of long. joint:—Plate \_\_\_\_\_ Rivet \_\_\_\_\_  
 Diameter of tube holes in drum 1 1/4" & 2" Pitch of tube holes 3 1/8" : 3 7/8" : 1 7/8" Percentage strength of shell in way of tubes 33 1/3  
 If Drum has a flat side state method of staying \_\_\_\_\_ Depth and thickness of girders at centre (if fitted) \_\_\_\_\_  
 Distance apart \_\_\_\_\_ Number and pitch of stays in each \_\_\_\_\_ Working pressure by rules \_\_\_\_\_  
 Steam Drum Heads or Ends:—Material Steel Thickness 1 7/8" Radius on low 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 5/16" : 1 3/8" : 1 7/8" Range of tensile strength 28/32 Tons Are drum shell plates welded or flanged no  
 Description of riveting:—Cir. seams D.R. long. seams \_\_\_\_\_ Diameter of Rivet Holes in long. seams \_\_\_\_\_  
 Pitch of rivets \_\_\_\_\_ Lap of plates or width of butt straps \_\_\_\_\_ Thickness of straps \_\_\_\_\_  
 Percentage strength of long. joint:—Plate \_\_\_\_\_ Rivet \_\_\_\_\_ Diameter of tube holes in drum 2" & 1 1/4" Pitch of tube holes 3 1/8" : 1 3/8" : 3 1/16"  
 Percentage strength of drum shell in way of tubes 33 1/3 Water Drum Heads or Ends:—Material Steel Thickness 2 9/32"  
 Radius on low stayed 2 1/2" Size of manhole or handhole 16" x 12" Headers or Sections:—Number \_\_\_\_\_  
 Material \_\_\_\_\_ Thickness \_\_\_\_\_ Tested by Hydraulic Pressure to \_\_\_\_\_ Material of Stays \_\_\_\_\_  
 Area at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working Pressure by Rules \_\_\_\_\_ Tubes:—Diameter \_\_\_\_\_  
 Thickness \_\_\_\_\_ Number \_\_\_\_\_ Steam Dome or Collector:—Description of Joint to Shell \_\_\_\_\_  
 Percentage strength of Joint \_\_\_\_\_ Diameter \_\_\_\_\_ Thickness of shell plates \_\_\_\_\_ Material \_\_\_\_\_  
 Description of longitudinal joint \_\_\_\_\_ Diameter of Rivet Holes \_\_\_\_\_ Pitch of Rivets \_\_\_\_\_ Working Pressure of shell by Rules \_\_\_\_\_  
 Crown or End Plates:—Material \_\_\_\_\_ Thickness \_\_\_\_\_ How stayed \_\_\_\_\_

UPERHEATER. 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. (imp?) Pressure to which each is adjusted \_\_\_\_\_ 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 \_\_\_\_\_ Gaskets or joints:—Manhole \_\_\_\_\_ Handhole \_\_\_\_\_ Handhole plates \_\_\_\_\_

The foregoing is a correct description, \_\_\_\_\_ Manufacturer.  


Dates of Survey } During progress of work in shops: 1930 Nov: 24 Dec: 16, 19, 23 (1931) Jan: 15, 27 Feb: 18, 24  
 while building } During erection on board vessel: 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  
 Total No. of visits: 42

### 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 efficiency beams 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. S. Brunns  
 Engineer Surveyor to Lloyd's Register of Shipping.

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

