

REPORT ON WATER TUBE BOILERS.

No. 96890

Received at London Office

Date of writing Report 19 When handed in at Local Office 14/11/38 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle on Tyne Date, First Survey 2/2/38 Last Survey 11/11/38
 Reg. Bk. 87009 on the Twin Sc. S/S "AMRA" (Number of Visits) Gross 8314 Tons Net 3993
 Master J.M. Built at Newcastle By whom built Swan, Hunter & Wigham Richardson Ltd When built 1938-11
 Engines made at Newcastle By whom made Parsons' Marine Steam Turbine Co. Ltd When made 1938
 Boilers made at RENFREW & NEWCASTLE. By whom made BARCOCK & WILCOX, AND SWAN, HUNTER & WIGHAM RICH'D'SN. LD. When made 1938
 Registered Horse Power Owners British India Steam Navigation Co. Ltd Port belonging to LONDON

SEE ALSO GLASGOW RPT. N° 60057. Colvilles, Ltd.

WATER TUBE BOILERS—MAIN, MANUFACTURED BY DONKEY. Manufacturers of Steel
 (Letter for Record 5) Date of Approval of plan 11-25/5/37; 4/4/37; 3/8/37; 23-24/9/37. Number and Description or Type of Boilers THREE Babcock & Wilcox Type Working Pressure 450 lbs. Tested by Hydraulic Pressure to 725 lbs. Date of Test 15/29 JULY 38

No. of Certificate 789, 790, 791. Can each boiler be worked separately Yes Total Heating Surface of Boilers 17895 sq. ft.

Is forced draught fitted Yes Area of fire grate (coal) in each Boiler 154 sq. ft. Total grate area of boilers in vessel including Main and Auxiliary 462 sq. ft. No. and type of burners (oil) in each boiler None. No. and description of safety valves on each boiler One 2 1/2" DOUBLE Improved High Lift Area of each valve 4.9 sq. in. Pressure to which they are adjusted 450 lbs./sq. in.

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 about 21" Height of Boiler 23'6" APPROX Width and Length 21'7" x 18'6" APPROX

Steam Drums:—Number in each boiler ONE Inside diameter 3'6" Material of plates Mild Steel Thickness 1 1/8"
 Range of Tensile Strength 28-32 tons/sq. in. Are drum shell plates welded or flanged Fusion Welded Description of riveting:—

Cir. seams long. seams 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 4 3/4" MAX. Pitch of tube holes 7 1/4" Percentage strength of shell in way of tubes 43.58 MIN. %

If Drum has a flat side state method of staying (if fitted) Distance apart Number and pitch of stays in each Working pressure by rules
 Steam Drum Heads or Ends:—Material MILD STEEL Thickness 1 7/16" Radius or how stayed 3'0" Rad.

Size of Manhole or Handhole 11" x 15" Water Drums:—Number in each boiler Inside Diameter
 Material of plates Thickness Range of tensile strength Are drum shell plates welded or flanged
 Description of riveting:—Cir. seams 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 Pitch of tube holes
 Percentage strength of drum shell in way of tubes Water Drum Heads or Ends:—Material Thickness
 Radius or how stayed Size of manhole or handhole Headers or Sections:—Number 27.

Material S.D. Steel Thickness 3/4" & 7/8" Tested by Hydraulic Pressure to 725 lbs./sq. in. Material of Stays PER BOILER 4" & 1 1/2" Tubes Diameter 4 1/2" & 1 1/2"
 Area at smallest part Area supported by each stay Working Pressure by Rules 450 lbs./sq. in. MUD DRUM: No PER BOILER ONE
 Thickness 2 L.S.G. & 789 L.S.G. Number 81 @ 4" & 1005 @ 1 1/2" Diameter 6" x 6" Thickness of shell plates 3/4" Material Steel
 Percentage strength of Joint Diameter of Rivet Holes Pitch of Rivets Working Pressure of shell by Rules 450 lbs./sq. in. Crown or End Plates:—Material Thickness How stayed

SUPERHEATER. Type B & W. Date of Approval of Plan 23/9/37 Tested by Hydraulic Pressure to 725 lbs./sq. in.
 Date of Test 15/6/38; 8/7/38; 22/7/38 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" Improved High Lift Pressure to which each is adjusted 440 lbs./sq. in. Is easing gear fitted Yes
 Is a drain cock or valve fitted at lowest point of superheater Yes Number, diameter, and thickness of tubes 90 @ 1 1/2" x 8 L.S.G.
 Spare Gear. Tubes 25 @ 4" Gaskets or joints:—Manhole Handhole 1962 @ 4 1/4" Handhole plates 12 @ 4 1/4"
 25 @ 1 1/2" Handhole 6 @ 3 3/4" Handhole plates 2 @ 3 3/4"
 24 @ 4" (Return) 90 @ 3 7/8" spdx 10 @ 3 7/8" spdx
 24 @ 1 1/2" (Spt.)

FOR the foregoing is a correct description, SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Manufacturer.

Dates of Survey } During progress of } work in shops - - } ARE } to the approved plan of boiler forwarded herewith } Yes.
 while } During erection on } board vessel - - - } Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been constructed under Special Survey in accordance with the approved plans and the Society's Rules and the materials and workmanship are good. They have been satisfactorily fitted on board re tested by hydr. press on board, and examined under working conditions. The Boilers are eligible in my opinion for classification with this Society.

Survey Fee ... £ See Machinery: } When applied for, 19
 Travelling Expenses (if any) £ : Rpt. : } When received, 19

Committee's Minute Assigned See F.E. machinery rpt

TUE 22 NOV 1938

Signature: A. Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

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