

REPORT ON WATER TUBE BOILERS.

No. 38176

Received at London Office

Date of writing Report 19 JAN 1938 When handed in at Local Office 21 Jan 1938 Port of New York

No. in Survey held at New York Date, First Survey 24 Dec 1937 Last Survey 14 Jan 1938

Reg. Bk. s/s ESSO HOUSTON (Number of Visits 7) Tons Gross 7699
Net 4654

Master ✓ Built at KEARNY N.J. By whom built FEDERAL S. B. + D. D. Co. When built 1938

Engines made at Trenton N.J. By whom made De Laval Steam Turbine Co. When made 1938

Boilers made at Carteret N.J. By whom made Foster Wheeler Corp. When made 1938

SHAFT Registered Horse Power 3000 Owners Standard Oil Co. of New Jersey Port belonging to Wilmington, Del.

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel

(Letter for Record (S)) Date of Approval of plan NOT BUILT UNDER SPECIAL SURVEY Number and Description or Type of Boilers 2 WATER TUBE (FOSTER WHEELER D TYPE) Working Pressure 450 LBS Tested by Hydraulic Pressure to 675 Date of Test 24/12/37

No. of Certificate NOT ISSUED Can each boiler be worked separately YES Total Heating Surface of Boilers 9190 SQ FT

Is forced draught fitted YES Area of fire grate (coal) in each Boiler OIL FIRED Total grate area of boilers in vessel including Main and Auxiliary ✓ No. and type of burners (oil) in each boiler 3 TODD HEXRESS No. and description of safety valves on each boiler 2- SPRING LOADED Area of each valve 7.07 D Pressure to which they are adjusted 440 LBS

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 NO WOODWORK Height of Boiler 18'-0 1/2" Width and Length 10'-9 1/2" x 16'-4 1/2"

Steam Drums:—Number in each boiler ONE Inside diameter 42" Material of plates STEEL Thickness 1 1/2"

Range of Tensile Strength 60000 LBS MINIMUM Are drum shell plates welded or flanged FUSION WELDED Description of riveting:—
 Cir. seams FUSION WELDED long. seams FUSION WELDED 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 90% ALLOWED Rivet ✓

Diameter of tube holes in drum 1 3/32" + 2 1/32" Pitch of tube holes 2 1/4" + 4 1/2" Percentage strength of shell in way of tubes 48.7

If Drum has a flat side state method of staying NO FLAT SIDE Depth and thickness of girders at centre (if fitted) ✓ Distance apart ✓ Number and pitch of stays in each ✓ Working pressure by rules 450 LBS

Steam Drum Heads or Ends:—Material STEEL Thickness 1 3/32" + 1 1/32" Radius or how stayed ELLIPTICAL

Size of Manhole or Handhole 12" x 16" Water Drums:—Number in each boiler ONE Inside Diameter 32"

Material of plates STEEL Thickness 1 1/8" Range of tensile strength 60000 LBS MINIMUM Are drum shell plates welded or flanged FUSION WELDED Description of riveting:—Cir. seams FUSION WELDED long. seams FUSION WELDED 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 90% ALLOWED Rivet ✓ Diameter of tube holes in drum 1 3/32" + 2 1/32" Pitch of tube holes 2 1/4" + 4 1/2"

Percentage strength of drum shell in way of tubes 48.7 Water Drum Heads or Ends:—Material STEEL Thickness 1 3/32" + 2 1/32"

Radius or how stayed ELLIPTICAL Size of manhole or handhole 12" x 16" Headers or Sections:—Number NONE

Material ✓ Thickness ✓ Tested by Hydraulic Pressure to ✓ Material of Stays ✓

Area at smallest part ✓ Area supported by each stay ✓ Working Pressure by Rules 450 LBS Tubes:—Diameter 1 1/4" + 2"

Thickness 108" + 132" Number 414 - 1 1/4" + 147 - 2" Steam Dome or Collector:—Description of Joint to Shell NO STEAM DOME

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 ✓

SUPERHEATER. Type INTER-DECK CONVECTION Date of Approval of Plan SPECIAL SURVEY Tested by Hydraulic Pressure to 675 PLACE SUPERHEATER CAN NOT BE SHUT OFF

Date of Test 24/12/37 Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler NOT BE SHUT OFF

Diameter of Safety Valve 1 1/2" Pressure to which each is adjusted 405 LBS Is easing gear fitted YES

Is a drain cock or valve fitted at lowest point of superheater YES Number, diameter, and thickness of tubes 120 - 1 1/2" DIA - 108" THICK

Spare Gear. Tubes 44 Gaskets or joints:—Manhole 5 Handhole 7 Handhole plates 7

The foregoing is a correct description, ✓
 J. J. Helis Manufacturer.
 VICE PRESIDENT
 FOSTER WHEELER CORP.

Dates of Survey while building } During progress of work in shops - - - }
 } During erection on board vessel - - - }

1937 Dec 24, 31 1938 JAN 4, 6, 10, 11, 14 Total No. of visits 7

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
PLEASE SEE ATTACHED SHEET

Survey Fee ... £ INCLUSIVE FEE : } When applied for, 19
 Travelling Expenses (if any) £ : : } When received, 19

John S. Heck McLachlan
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned 2 WTB (Spt) 450 lbs

NEW YORK FEB 2 - 1938

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21 FEB

S.S. "ESSO HOUSTON"WATERTUBE BOILERS

These boilers were not built under Special Survey but they have been examined and as far as can be seen the workmanship and material are good. The scantlings are in accordance with the Rules of the U.S. Steamboat Inspectors.

The boilers have been built under supervision of the U. S. Steamboat Inspectors and Special Survey of the American Bureau of Shipping. The drums have been fusion welded in accordance with the Rules of those authorities, and the material and electric welding has been tested by their representatives. There is attached hereto a report of tests stated to have been made on the fusion welds.

The complete boilers have been hydraulically tested to 900 lbs before fitting on board by the above authorities and to 675 lbs after fitting on board in presence of the undersigned, and the boilers were found good and shewing no sign of weakness at that pressure. The boiler drums were examined internally by the undersigned, and under steam, and they appear to be good, and were found tight.

The boilers have been built to withstand a working pressure of 450 lbs. The safety valves have been set, in presence of the undersigned, to 440 lbs, and the safety valve on the superheater outlet has been set at 415 lbs.

In my opinion, these boilers are now in good and safe working condition and eligible to receive the notation 2 W. T. BOILERS 450 lbs. in the Register Book, subject to being annually surveyed.

 John S. Heck

Surveyor to Lloyd's Register of Shipping.