

## REPORT ON WATER TUBE BOILERS.

No. 2433

22 JAN 1932

Received at London Office

Date of writing Report *January 1932* When handed in at Local Office *6th Jan 1932* Port of *Barrow*

No. in Survey held at *Barrow* Date, First Survey *Sept 3rd 1930* Last Survey *12th January 1932*

Reg. Bk. *35211* on the *Steel Gun Screw Turbo-Electric "Strathaird"* Number of Visits *32* Tons { Gross *225414* Net *13621*

Master *✓* Built at *Barrow* By whom built *Vickers-Armstrongs Ltd* When built *1932*

Engines made at *Rugby* By whom made *The British Thomson Houston Ltd* When made *1932*

Boilers made at *Barrow* By whom made *Vickers-Armstrongs Ltd* When made *1932*

NOMINAL Horse Power *6315* Owners *Peninsular & Oriental S.N. Co. Ltd* Port belonging to *London*

WATER TUBE BOILERS—~~MAIN~~ AUXILIARY, OR ~~DONKEY~~—Manufacturers of Steel *English Steel Corporation* *Vickers Ltd* *British Thompson Houston Ltd*

(Letter for Record *S*) Date of Approval of plan *16/4/30* Number and Description or Type of Boilers *Two Barrow* Working Pressure *425 lb* Tested by Hydraulic Pressure to *688 lb* Date of Test *3/1/31*

No. of Certificates *450 & 453* Can each boiler be worked separately *Yes* Total Heating Surface of Boilers *6000 sq ft*

Is 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 *3 Clyde* No. and description of safety valves on each boiler *Single 2" Highlift* Area of each valve *3.1416 sq in* Pressure to which they are adjusted *446 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 *unspaced* and bunkers *unspaced* *2'-0"* Height of Boiler *15'-6"* Width and Length *14'-5" x 14'-9"*

Steam Drums:—Number in each boiler *One* Inside diameter *50"* Material of plates *Steel* Thickness *1 5/8"*

Range of Tensile Strength *24 to 38 ton* Are drum shell plates welded or flanged *No* Description of riveting:—

Cir. seams *Double* 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 3/4" & 1 1/4"* Pitch of tube holes *1 1/8", 2 5/8", 3 3/8"* Percentage strength of shell in way of tubes *33 2/3*

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 1/8"* Radius *unreinforced* *50"*

Size of Manhole *or Handhole* *16" x 12"* Water Drums:—Number in each boiler *Three* Inside Diameter *23"*

Material of plates *Steel* Thickness *1 1/8", 1 3/8" & 1 1/4"* Range of tensile strength *28 to 32 ton* Are drum shell plates welded or flanged *No* Description of riveting:—Cir. seams *Double* long. seams *Solid* 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 *1 3/4" & 1 1/4"* Pitch of tube holes *1 1/8", 2 5/8", 3 3/8"*

Percentage strength of drum shell in way of tubes *33 2/3* Water Drum Heads or Ends:—Material *Steel* Thickness *2 9/32"*

Radius *unreinforced* *21 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 *1 1/4" & 1 3/4"*

Thickness *9 lbs., 11 lbs., 14 lb.* Number *1108* 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 *Barrow* Date of Approval of Plan *29/5/30* Tested by Hydraulic Pressure to *688 lb*

Date of Test *24/4/31* & *15/5/31* Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler *cannot be shut off*

Diameter of Safety Valve *Double 1 1/2" Highlift* Pressure to which each is adjusted *425 lb* Is easing gear fitted *Yes*

Is a drain cock or valve fitted at lowest point of superheater *Yes* Number, diameter, and thickness of tubes *254, 9 lbs., 1 1/8"*

Spare Gear. Tubes *140* Gaskets or joints:—Manhole *16* Handhole *✓* *MANHOLE* plates *8*

The foregoing is a correct description,

*W. Johnson* for *Vickers Armstrongs Ltd* Manufacturer.

Dates of Survey } During progress of *1930 - Sept 3, 17, 26, Nov 5, 1931 - Mar 5, 12, Apr 24, 29* Is the approved plan of boiler forwarded herewith *Yes*

while } work in shops - - - *May 1, 15, 19, June 2, 19, 25, July 3, 16, Aug 17, 21*

building } During erection on } board vessel - - - *Sept 3, 14, 23, Oct 6, 13, Nov 5, 16, 24, 29, Dec 21* Total No. of visits *32*

*1932 - Jan 6, 10, 13, 14*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been built in accordance with the approved plans and the Rules. The material and workmanship are good. They have been efficiently fixed and mounted and their safety valves adjusted under steam.*

Survey Fee ... £ *mainly spent* When applied for, *19*

Travelling Expenses (if any) £ *✓* When received, *19*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 26 JAN 1932*Assigned *See F.C. Rep.*

003659-003670-0027

Lloyd's Register Foundation