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N.D.O.

REPORT ON BOILERS.

No. 17548

18 NOV 1943

Exceeded at London Office

Date of writing Report 12th Nov 1943 When handed in at Local Office 15th Nov 1943 Port of *Widderesbrough*

No. in Survey held at *Widderesbrough* Date, First Survey *4th Jan. 1942* Last Survey *5th November 1943*

Boilers made at *Widderesbrough* By whom made *Franklin Machine & Foundry Co* (Number of Visits *32*) Gross *292* Net *NIL*

Boilers made at *Widderesbrough* By whom made *Franklin Machine & Foundry Co* Engine No. *6617* When made *1943*

Boilers made at *Widderesbrough* By whom made *Franklin Machine & Foundry Co* Boiler No. *6617* When made *1943*

Nominal Horse Power Owners *Ministry of War Transport* Port belonging to *Hull*

By whom built *Bochram Sons Ltd* Yard No. *1297* When built *1945*

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Appley Frodingham Steel Co Ltd* (Letter for Record *S*)

Total Heating Surface of Boilers *1786 sq ft* Is forced draught fitted *YES* Coal or Oil fired *OIL*

No. and Description of Boilers *1 S.E. Marine* Working Pressure *220 lb/sq in*

Tested by hydraulic pressure to *394 lb/sq in* Date of test *5/11/43* No. of Certificate *7100* Can each boiler be worked separately *✓*

Area of Firegrate in each Boiler *✓* No. and Description of safety valves to each boiler *1-2" D.S. High Lift* *✓*

Area of each set of valves per boiler *per Rule 4.75 for 1 H.L.* Pressure to which they are adjusted *225 lb/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 *✓*

Smallest distance between boilers or uptakes and bunkers or woodwork *BL to O.F.T. = 6' 0"* Is oil fuel carried in the double bottom under boilers *NO*

Smallest distance between shell of boiler and tank top plating *NONE* Is the bottom of the boiler insulated *YES*

Largest internal dia. of boilers *12' 9" 2"* Length *11' 6"* Shell plates: Material *Steel* Tensile strength *29.33*

Thickness *1 1/4"* Are the shell plates welded or flanged *NO* Description of riveting: circ. seams *DR*

Long. seams *TR D.B.S.* Diameter of rivet holes in *circ. seams 1 5/16"* Pitch of rivets *3.79"*

Percentage of strength of circ. end seams *plate 65.3* Percentage of strength of circ. intermediate seam *plate 5*

Percentage of strength of longitudinal joint *plate 86.6* *riquets 87.8* *combined 87.29*

Thickness of butt straps *outer 1"* *inner 1 1/8"* No. and Description of Furnaces in each Boiler *3 Deighton*

Material *Steel* Tensile strength *26.30* Smallest outside diameter *3' 1 1/4"*

Length of plain part *top 19/32"* Thickness of plates *bottom 19/32"* Description of longitudinal joint *welded*

Dimensions of stiffening rings on furnace or c.c. bottom *✓*

End plates in steam space: Material *Steel* Tensile strength *26.30* Thickness *1 7/32"* Pitch of stays *19" x 16"*

How are stays secured *D. Anti + washers*

End plates: Material *front Steel* Tensile strength *26.30* Thickness *1 5/16"*

Back *Steel* Tensile strength *26.30* Thickness *1 5/32"*

Can pitch of stay tubes in nests *10 1/4"* Pitch across wide water spaces *14"*

Orders to combustion chamber tops: Material *Steel* Tensile strength *28.32* Depth and thickness of girder

Centre *8 1/2" x 2 5/8"* Length as per Rule *2' 7 1/32"* Distance apart *7"* No. and pitch of stays

Each *2 x 10"* Combustion chamber plates: Material *Steel*

Tensile strength *26.30* Thickness: Sides *1 1/16"* Back *1 1/16"* Top *1 1/16"* Bottom *3/4"*

Pitch of stays to ditto: Sides *10" x 7"* Back *9 1/2" x 8"* Top *10" x 7"* Are stays fitted with nuts or riveted over *Ends*

End plate at bottom: Material *Steel* Tensile strength *26.30*

Thickness *1 5/16"* Lower back plate: Material *Steel* Tensile strength *26.30* Thickness *27/32"*

Pitch of stays at wide water space *14" x 8"* Are stays fitted with nuts or riveted over *Ends*

Shipping stays: Material *Steel* Tensile strength *28.32*

At body of stay, *3"* No. of threads per inch *6*

Over threads *Steel* Tensile strength *26.30*

At turned off part, *2 1/4" x 1 7/8" x 1 3/4"* No. of threads per inch *9*

Over threads *Steel* Tensile strength *26.30*

At turned off part, *2 1/4" x 1 7/8" x 1 3/4"* No. of threads per inch *9*

Over threads *Steel* Tensile strength *26.30*

At turned off part, *2 1/4" x 1 7/8" x 1 3/4"* No. of threads per inch *9*

Over threads *Steel* Tensile strength *26.30*

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Are the stays drilled at the outer ends no
Margin stays: Diameter { At turned off part, or Over threads 17/8"
No. of threads per inch 9
Tubes: Material Samuel Steel External diameter { Plain 3" Thickness { 8 W.F. No. of threads per inch 9
Pitch of tubes 4'8" x 4'4" Manhole compensation: Size of opening in shell plate 20 1/2" x 16 1/2" Section of compensating ring 9'4" x 1'4" No. of rivets and diameter of rivet holes 40 - 1 5/16"
Outer row rivet pitch at ends 9'8" Depth of flange if manhole flanged ✓ Steam Dome: Material None
Tensile strength _____ Thickness of shell _____ Description of longitudinal joint { Plate Rivets
Diameter of rivet holes _____ Pitch of rivets _____ Percentage of strength of joint { Plate Rivets
Internal diameter _____ Thickness of crown _____ No. and diameter of stays _____ Inner radius of crown _____
How connected to shell _____ Size of doubling plate under dome _____ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell _____

Type of Superheater NONE Manufacturers of { Tubes Steel forgings Steel castings
Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____
Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____
Area of each safety valve _____ Are the safety valves fitted with easing gear _____ Hydraulic test pressure _____
Pressure to which the safety valves are adjusted _____ and after assembly in place _____ Are drain cocks tubes _____ forgings and castings _____
valves fitted to free the superheater from water where necessary _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes For and on behalf of STOCKTON CHEMICAL ENGINEERS & RILEY BOILERS LTD.
The foregoing is a correct description,
G. W. Riley Manufacture

Dates of Survey { During progress of work in shops - 1942 Jan. 7, Feb. 6, 19, 27, March 3, 17, Nov. 4, Dec. 4, 21, 1943 Jan. 11, Feb. 8, 24, March 16, 22, 29,
while building { During erection on board vessel - April 14, 30, May 7, 12, June 4, 9, 28, July 19, 30, Aug. 1, 3, Sept. 27, Oct. 6, 20, 25, Nov. 3, 5. Are the approved plans of boiler and superheater forwarded herewith No. 21/4/42
(If not state date of approval.)
Total No. of visits 32

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. H'dra Rpt. No. 17463

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

This boiler has been constructed under Special Survey & in accordance with the Rule Requirements & approved plans.
The materials & workmanship are good & on completion the boiler was hydraulically tested to 380 lbs/sq. & found satisfactory.
This boiler is being dispatched for Admiralty Reserve Stock. Order No. A/MS/M 233.

Above boiler installed in Empire Flora by Amos & Smith at Hull.
Examined under working conditions, safety valves adjusted to 225 lbs, ring signs P 7/16" S 5/32", accumulation test held and found satisfactory on completion of all tests.

W. S. Shields
Hull.

Survey Fee ... £ 11 : 18 : 6 When applied for, 15/11/43
Travelling Expenses (if any) £ 2 : 19 : 6 When received, 19
14/12/43 Hull

G. Norman Stuart
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute 5 OCT. 1945

Assigned Sir F. E. Machy. op. b.



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