

Rpt. 5a.

REPORT ON BOILERS.

No. 18158

Received at London Office

23 OCT 1946

Date of writing Report 17th Oct 1946. When handed in at Local Office 22nd Oct 1946. Port of MIDDLESBROUGH.

No. in Survey held at STOCKTON-on-TEES.
Reg. Book.

Date, First Survey 14th Nov. 1945. Last Survey 15th October 1946.

(Number of Visits 29)
Tugs
Net

on the "BRITISH FERN"

Built at Sunderland By whom built Sir J. Laing & Sons Ltd.

Yard No. 441 When built 1947

Engines made at Sunderland. By whom made Wm. Doxford & Sons.

Engine No. 257 When made 1947.

Boilers made at Stockton-on-Tees. By whom made Stockton C.E. & R.B. Ltd.

Boiler No. 6937 When made 1946.

Nominal Horse Power 684 Owners British Tanker Co. Ltd. Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby Frodingham Steel Co. Ltd.

Total Heating Surface of Boilers 2020 sq. ft.

Is forced draught fitted

(Letter for Record S)

Coal or Oil fired or Exhaust gas

No. and Description of Boilers 1 S.E. Multitubular.

Working Pressure 150 lbs per sq. in

Tested by hydraulic pressure to 275 Date of test 15.10.46 No. of Certificate 7193

Can each boiler be worked separately

Area of Firegrate in each Boiler 10.2 No. and Description of safety valves to each boiler 15.3 ordinary valves

Area of each set of valves per boiler {per Rule 14.12 as fitted 15.1 Pressure to which they are adjusted 150 lbs

Are they fitted with easing gear

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

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers 12' 10.3/16" Length 11' 6"

Shell plates: Material Steel Tensile strength 29 - 33

Thickness 29/32" Are the shell plates welded or flanged

Description of riveting: circ. seams {end DR. Lap. inter.

long. seams TR. DBS Diameter of rivet holes in {circ. seams 1.1/16" long. seams 1.1/16"

Pitch of rivets {3.187 7.1/16"

Percentage of strength of circ. end seams {plate 66.6% rivets 48.7

Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 84.9 rivets 103 combined

Thickness of butt straps {outer 25/32" inner 27/32"

No. and Description of Furnaces in each Boiler 2 Deighton Corrugated.

Material Steel

Tensile strength 26.30

Smallest outside diameter 3' 10"

Length of plain part {top bottom

Thickness of plates {crown 1/2" bottom 1/2"

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" Pitch of stays 18" x 17"

How are stays secured Double nuts and washers screwed into both plates.

Tube plates: Material {front Steel Tensile strength 26.30

Thickness {7/8" 5/8"

Mean pitch of stay tubes in nests 9 3/4" Pitch across wide water spaces 13 1/2"

Girders to combustion chamber tops: Material Steel Tensile strength 28.32

Depth and thickness of girder

at centre 7" - 2 @ 5/8" Length as per Rule 2' 3 1/2" Distance apart 9"

No. and pitch of stays

in each 2 @ 9" Combustion chamber plates: Material Steel

Tensile strength 26 - 30 Thickness: Sides 21/32" Back 19/32" Top 21/32" Bottom 21/32"

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

Front plate at bottom: Material Steel

Tensile strength 26-30

Thickness 7/8" Lower back plate: Material Steel

Tensile strength 26-30 Thickness 3/4"

Pitch of stays at wide water space 13 1/2"

Are stays fitted with nuts or riveted over nuts

Main stays: Material steel

Tensile strength 28-32

Diameter {At body of stay, or Over threads 2 3/4"

No. of threads per inch 6

Screw stays: Material Steel

Tensile strength 26.30

Diameter {At turned off part, or Over threads 1 1/2"

No. of threads per inch 9

Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 1/2"

No. of threads per inch 9

Tubes: Material Seamless Steel External diameter { Plain 2 1/2" Stay 2 1/2" Thickness { 10 S.W.G. 5/16 No. of threads per inch 9

Pitch of tubes 3 3/4" x 3 3/4" Manhole compensation: Size of opening in shell plate 21" x 17" Section of compensating ring 8 1/2" x 1 1/2" No. of rivets and diameter of rivet holes 52 - 1.1/16"

Outer row rivet pitch at ends 7.1/16" Depth of flange if manhole flanged - Steam Dome: Material None

Tensile strength Thickness of shell Description of longitudinal joint

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

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

Pressure to which the safety valves are adjusted

Hydraulic test pressure:

tubes

forgings and castings

and after assembly in place

Are drain cocks or

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

STOCKTON ENGINEERING CO. LTD. BOILERS LTD.

For and on behalf of The foregoing is a correct description, STOCKTON ENGINEERING CO. LTD. Registered in England

Manufacturer.

Dates of Survey { During progress of work in shops - - 1945. Nov. 14. 23. 29. Dec. 14. 20. 28. 1946. Jan. 1. 16. Feb. 7. 14. 28. Mar. 7. 26. 29. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 9.2.45. while building { During erection on board vessel - - May. 10. 20. 30. June. 4. 13. July 2. 8. 15. 23. Aug 7. 15. 26. Total No. of visits 29

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. 18052 with British

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under

Special Survey and in accordance with the Rule Requirements and approved plan.

The materials and workmanship are good, and on completion the boiler was hydraulically tested to 275 lbs per sq. inch and found satisfactory.

This boiler is being forwarded to Sunderland for Wm. Doxford's Contract No. 257.

This boiler has been securely fitted on board the vessel & the Safety valves adjusted to working pressure

In recommendation please see Machf. Rpt.

W. H. Fraser.

Survey Fee £ 20 : 5 : 0 When applied for, 22/10/46

Travelling Expenses (if any) £ : : When received, 19

L. Norman Stuart

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 25 JUL 1947

Assigned Su F.E. machf. rpt.



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