

REPORT ON BOILERS.

Std. No. 33545
Mach. No. 14364

-6 NOV 1942

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Date of writing Report 19 3/11/42 Port of Middlesbrough

No. in Reg. Book. Stockton a Tees Date, First Survey 23rd June, 1942 Last Survey 29th October, 1942.

on the HARPAGUS. (Number of Visits 12.) Gross 7271 Tons Net 5044

Built at Sunderland By whom built Wm. Leyland & Son Ltd. Yard No. 695 When built 1942

Engines made at Sunderland By whom made Wm. Doxford & Son Ltd. Engine No. 695 When made 1942.

Boilers made at Stockton a Tees By whom made Stockton Chem. Eng. & Riley Bros Ltd. Boiler No. 6623 When made 1942

Nominal Horse Power Owners National Steamship Co. Ltd. Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 2130 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Oil fired

No. and Description of Boilers 1. S.E. Marine Working Pressure 120 lb. sq. in.

Tested by hydraulic pressure to 230 lb. sq. in. Date of test 29/10/42 No. of Certificate 7061. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 9.8 sq. ft. No. and Description of safety valves to each boiler Two Sup. High Lift. Area of each set of valves per boiler {per Rule 14.1 sq. ft. as fitted} Pressure to which they are adjusted 120 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 - Is oil fuel carried in the double bottom under boilers Yes.

Smallest distance between shell of boiler and tank top plating 2'-3" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 12'-10 9/16" Length 11'-6" Shell plates: Material Steel Tensile strength 29/33

Thickness 2 3/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end DR inter. 3-238"} long. seams TR DBS Diameter of rivet holes in {circ. seams 1 1/16" long. seams 1 3/16"} Pitch of rivets 5 15/16"

Percentage of strength of circ. end seams {plate 67.19% rivets 60.4%} Percentage of strength of circ. intermediate seam {plate 86.31% rivets 93.53% combined 87.8%}

Percentage of strength of longitudinal joint {plate 86.31% rivets 93.53% combined 87.8%}

Thickness of butt straps {outer 9/16" inner 7/16"} No. and Description of Furnaces in each Boiler 3 - Corrugated Deighton

Material Steel Tensile strength 26/30 Smallest outside diameter 3'-0 1/2"

Length of plain part {top 3/8" bottom 3/8"} Thickness of plates {crown 3/8" bottom 3/8"} 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 29/32" Pitch of stays 18" x 16"

How are stays secured D Nuts & washers

Tube plates: Material {front Steel back Steel} Tensile strength 26/30 Thickness {1 1/16" 1 1/16"}

Mean pitch of stay tubes in nests 9 3/8" 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 1/2" x 2 @ 9/8" Length as per Rule 2'-5 3/4" Distance apart 10" No. and pitch of stays in each 2 - 9 1/2"

Combustion chamber plates: Material Steel Tensile strength 26/30 Thickness: Sides 19/32" Back 9/16" Top 19/32" Bottom 7/8"

Pitch of stays to ditto: Sides 10" x 9" Back 10" x 8 1/4" Top 10" x 9 1/4" Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material Steel Tensile strength 26/30

Thickness 1 1/16" Lower back plate: Material Steel Tensile strength 26/30 Thickness 1 1/16"

Pitch of stays at wide water space Steel 13 1/2" Are stays fitted with nuts or riveted over 28/32 Nuts

Main stays: Material Steel Tensile strength 28/32

Diameter {At body of stay, 2 3/8" or Over threads, 2 3/8"} No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26/30

Diameter {At turned off part, 1 3/8" or Over threads, 1 1/2" x 1 9/8"} No. of threads per inch 9



Are the stays drilled at the outer ends No Margin stays: Diameter ^{(At turned off part,} 1 1/2"
 or ^{Over threads} 1 1/2"
 No. of threads per inch 9
 Tubes: Material Iron lap welded External diameter ^{Plain} 2 3/4" Thickness ^{8 W9} 5/16" No. of threads per inch 9
^{Stay} 2 3/4"
 Pitch of tubes 3 3/4" x 3 3/4" Manhole compensation: Size of opening in
 shell plate 20" x 16" Section of compensating ring 7" x 1" No. of rivets and diameter of rivet holes 44 - 15/16"
 Outer row rivet pitch at ends 6" 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 Yes
 For and on behalf of STOCKTON CHEMICAL ENGINEERS & RILEY BOILERS Ltd.
The foregoing is a correct description,
[Signature] Manufacturer.
 DIRECTOR

Dates of Survey ^{During progress of} June 23, July 13, 20, Aug. 14, Sept. 1, 10. Are the approved plans of boiler and superheater forwarded herewith 23-1-42
^{work in shops - - -} 23. 28. Oct. 6, 15, 22, 29. (If not state date of approval.)
^{while} ^{During erection on} _____
^{building} ^{board vessel - - -} _____ Total No. of visits 12

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. NDB 17345

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Boiler has been constructed
under Special Survey 9 in accordance with the Rule Requirements & approved
plans. The materials & workmanship are good & on completion the boiler
was hydraulically tested to 230 lb sq in & found satisfactory.
This Boiler has been forwarded to Messrs W. Dorman & Son L. Sunderland
for their Contract No 695

This boiler has been securely fixed on board the vessel
& safety valves adjusted to working pressure.
In recommendation please see machy. Rpt.

[Signature]

Survey Fee £ 14 : 4 : 0 When applied for, 2/11/1942
 Travelling Expenses (if any) £ : : When received, 19

[Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 15 DEC 1942
 Assigned See Illd. 76 33545



If not, state whether, and when, one will be sent? (The Surveyors are requested not to write on or below the space for Committee's Minute.)