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SUNDERLAND RPT. NO. 35204

REPORT ON BOILERS.

No. 18630.

23 NOV 1948

Received at London Office

Date of writing Report 18th Nov. 1948. When handed in at Local Office 22nd Nov. 1948. Port of MIDDLESBROUGH.

No. in Surrey held at Stockton-on-Tees. Date, First Survey 16th Sept. Last Survey 17th Nov. 1948.

on the **STEINGRIM STANGE**

(Number of Visits 7.) Gross Tons 10099 Net Tons 5895

Built at Sunderland By whom built Sir J. Lang & Sons L^d Yard No. 483 When built 1949

Engines made at Sunderland By whom made Wm. Bayford & Sons L^d Engine No. 266 When made 1949

Boilers made at Stockton By whom made Stockton C.E. & R.B. Ltd. Boiler No. 7094 When made 1948

Nominal Horse Power MN 4.2. Owners Skibs a/s Arustem Port belonging to Oslo

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Apploby-Frodingham Steel Co. (Letter for Record)

Total Heating Surface of Boilers 1700 sq. ft. Is forced draught fitted Yes Coal or Oil fired Oil & Ex. Gas.

No. and Description of Boilers 1 S.E. Multitubular Working Pressure 150 lbs.

Tested by hydraulic pressure to 275 lbs Date of test 17.11.48. No. of Certificate 7261 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 1 - 2 3/4" D.S. H. L Marine Type

Area of each set of valves per boiler {per Rule 10.31 as fitted 11.88 Pressure to which they are adjusted 150 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 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 11' 10 3/4" Length 11' 6" Shell plates: Material Steel Tensile strength 29.33

Thickness 13/16" Are the shell plates welded or flanged No Description of riveting: circ. seams DR. L

long. seams TR.DBS Diameter of rivet holes in {circ. seams 1.1/16" long. seams 15/16" Pitch of rivets {3.106" 6 1/2"

Percentage of strength of circ. end seams {plate 65.8% rivets 55.1 Percentage of strength of circ. intermediate seam {plate - rivets -

Percentage of strength of longitudinal joint {plate 85.6 rivets 97.0 combined

Thickness of butt straps {outer 5/8" inner 3/4" No. and Description of Furnaces in each Boiler 2 Deighton

Material Steel Tensile strength 26.30 Smallest outside diameter 3' 6 1/2"

Length of plain part {top - bottom - Thickness of plates {crown 15/32" bottom - Description of longitudinal joint Welded.

End plates in steam space: Material Steel Tensile strength 26.30 Thickness 13/16" Pitch of stays 16 1/2 x 15"

How are stays secured Double nuts and washers, stays screwed into both plates. M.D.B. later 18/12/48. 16 1/2 x 14"

Tube plates: Material {front Steel back Steel Tensile strength 26-30 Thickness {13/16" 3/4"

Mean pitch of stay tubes in nests 9 1/2" 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" x 1 1/2" Length as per Rule 2' 4.3/32" Distance apart 8 1/2" No. and pitch of stays

in each Solid Welded 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" x 9" Top - Are stays fitted with nuts or riveted over nuts

Front plate at bottom: Material Steel Tensile strength 26.30 Thickness 13/16" 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 2.3/8" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26.30

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



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Are the stays drilled at the outer ends No Margin stays: Diameter ^{(At turned off part,} 1.5/8" x 1 3/4"
 or Over threads
 No. of threads per inch 9
 Tubes: Material Hot Rolled External diameter ^{Plain} 2 1/2" ^{Stay} 2 1/2" Thickness ^{9 S.W.G.} 5/16" No. of threads per inch 9
 Pitch of tubes 3 3/4" x 3.5/8" Manhole compensation: Size of opening in shell plate 21" x 17" Section of compensating ring 5 7/8" x 1 1/8" No. of rivets and diameter of rivet holes 52 - 15/16"
 Outer row rivet pitch at ends 6 1/2" Depth of flange if manhole flanged - Steam Dome: Material _____
 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 _____

The foregoing is a correct description,
 Stockton Chemical Engineers & Rifley Boilers Ltd. Manufacturer.

Dates of Survey ^{During progress of work in shops - -} 1948. Sept. 18, Oct. 4, 8, 14, Nov. 2, 10, 17. Are the approved plans of boiler and superheater forwarded herewith 19.5.47.
 while building ^{During erection on board vessel - - -} _____ Total No. of visits 7.

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

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 used, and workmanship are good and on completion this boiler was hydraulically tested to 275 lbs per sq. inch and found satisfactory.
This boiler is being forwarded to Sunderland for Messrs. W. Doxford's Contract No. 267.

This boiler has been securely fixed on board the vessel & safety valves adjusted under steam to working pressure as above.

For recommendation please see machy Rpt.

John Underhill

Survey Fee ... £ 28 : 8 : 0 When applied for, 22.11.1947.
 Travelling Expenses (if any) £ : : When received, 19

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

Committee's Minute FRI, 11 NOV 1949
 Assigned See F.R. machy rpt.