

REPORT ON BOILERS.

No. 59944

12 JAN 1954

Received at London Office.....

HULL.

Date of writing Report 9.12.53.19 When handed in at Local Office 30 DEC 1953 Port of

No. in Reg. Book. Survey held at HULL Date, First Survey 2. 2. 53. Last Survey 24. 11. 19. 53. (Number of Visits 8.....)

21436 on the Steam Trawler "NORTHERN CROWN" Tons Gross 804 Net 291

Built at Selby. By whom built Cochrane & Sons, Ltd., Yard No. 1386 When built 1953

Engines made at Hull. By whom made Amos & Smith, Ltd., Engine No. 840 When made 1953

Boilers made at -do- By whom made -do- -do- -do- -do- Boiler No. 840 When made 1953

Nominal Horse Power 207 Owners Northern Trawlers, Ltd. Port belonging to Grimsby.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby-Frodingham Steel Co., Scunthorpe. (Letter for Record S.....)

Total Heating Surface of Boilers 2,900 sq.ft. Of Superheaters 1,150 sq.ft.

Total for Register Book 4,050 sq.ft. Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers One S.E. Cylindrical Multitubular. Working Pressure 225 lb/sq.in.

Tested by hydraulic pressure to 388 lb/sq.in. Date of test 29.5.53. No. of Certificate 4393 Can each boiler be worked separately -

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler One 3 1/2" double spring ordinary

Area of each set of valves per boiler per Rule Approved. 19.2 sq.ins. Pressure to which they are adjusted 230 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 4 ft.

Smallest distance between boilers or uptakes and bunkers or woodwork Is oil fuel carried in the double bottom under boilers no D.B.

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated No

Largest internal dia. of boilers 16'-2.31/32" Length 11'-0" Shell plates: Material O.H. Steel. Tensile strength 31-35 tons/sq.inch

If fusion welded, state name of welding Firm Have all the requirements of the Rules for Class I vessels been complied with Thickness 1.33/64" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. Lap.

butt long. seams treble riveted double Diameter of rivet holes in circ. seams 1.15/32" Pitch of rivets 3.7/8" 9.9/16" & 4.25/32"

Percentage of strength of circ. end seams plate 44.1% rivets 42.8% Percentage of strength of circ. intermediate seam plate 84.3% rivets 84.7% combined 85.5%

Percentage of strength of longitudinal joint plate 84.3% rivets 84.7% combined 85.5%

Thickness of butt straps outer 1.11/64" inner 1.19/64" No. and Description of Furnaces in each Boiler Three Deighton corrugated.

Material O.H. Steel. Tensile strength 26-30 tons/sq.inch. Smallest outside diameter 4'-0" Electric welded.

Length of plain part top bottom Thickness of plates 47/64" Description of longitudinal joint

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

End plates in steam space: Material O.H. Stl. Tensile strength 26-30 tons/sq.inch. Thickness 1.9/32" Pitch of stays 19 1/2" x 19 1/2"

How are stays secured Double nuts and 12" x 31/32" plate washers.

Tube plates: Material front O.H. Steel Tensile strength 26-30 tons/sq.inch. Thickness 31/32" back -do- -do- 29/32"

Mean pitch of stay tubes in nests 10.96" Pitch across wide water spaces 14 1/2"

Girders to combustion chamber tops: Material O.H. Stl. Tensile strength 29-33 tons/sq.inch. Depth and thickness of girder at centre 9 1/2" x (two x 7/8") Length as per Rule 2'-10 1/4" Distance apart 9" x 9 1/4" No. and pitch of stays in each Three - 8 1/4"

Tensile strength 26-30 tons/sq.inch. Thickness: Sides 3/4" Back 23/32" Top 23/32" Bottom 15/16"

Pitch of stays to ditto: Sides 9 3/4" x 8" Back 8.7/8" x 8 3/4" Top 8 1/4" x 9 1/4" Are stays fitted with nuts or riveted over Nuts.

Front plate at bottom: Material O.H. Steel. Tensile strength 26-30 tons/sq.inch.

Thickness 31/32" Lower back plate: Material O.H. Steel. Tensile strength 26-30 tons/sq.inch. Thickness 29/32"

Pitch of stays at wide water space 14 3/8" x 9 1/2" x 8 3/4" Are stays fitted with nuts or riveted over Nuts.

Main stays: Material O.H. Steel. Tensile strength 28-32 tons/sq.inch.

Diameter At body of stay 3 3/8" No. of threads per inch 6 Over threads 3 3/8"

Screw stays: Material O.H. Steel. Tensile strength 26-30 tons/sq.inch.

Diameter At turned off part 1 3/4" No. of threads per inch 9 Over threads 1 3/4"

Are the stays drilled at the outer ends..... No. 9 ✓ Margin stays: Diameter 1.7/8", 2", 2 1/8" At turned off part, or Over threads

No. of threads per inch..... 9 ✓

Tubes: Material Seamless Stl. External diameter 4 3/4" x 4 3/4" ✓ Plain..... 3 1/2" Stay..... 3 1/2" ✓ Thickness 7 W.G. ✓ 5/16", 3/8", 7/16" No. of threads per inch..... 9 ✓

Pitch of tubes..... 16" x 12" ✓ Section of compensating ring 50 1/4" x 1 1/4" ✓ No. of rivets and diameter of rivet holes 76-1.3/32" ✓ 46-1.15/32" ✓

Outer row rivet pitch at ends 11.33" ✓ Depth of flange if manhole flanged 3 1/2" in dome. ✓ Steam Dome: Material O.H. Steel. ✓

Tensile strength 26-30 tons/sq.in. Thickness of shell 13/16" Description of longitudinal joint S.R. Lap. Plate..... 51.3% Rivets..... 45.4%

Diameter of rivet holes..... 1.3/32" ✓ Pitch of rivets..... 2 1/4" Percentage of strength of joint..... 1" ✓ No. and diameter of stays..... Three - 2 1/2" ✓ Inner radius of crown..... Flat. ✓

How connected to shell Double riveted. ✓ Size of doubling plate under dome 62 1/4" x 1 1/4" ✓ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 1.3/32" x 4.03" pitch ✓

Type of Superheater Melesco Manufacturers of See Manchester Certificates. Steel forgings. Steel castings.

Number of elements 54 Material of tubes O.H. Steel. Internal diameter and thickness of tubes 20mm x 3mm

Material of headers O.H. Steel. Tensile strength..... Thickness..... Can the superheater be shut off and the boiler be worked separately Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes ✓

Area of each safety valve 3.14 sq.inch. Is the safety valve fitted with easing gear Yes ✓

Pressure to which the safety valves is adjusted 230 lb/sq.inch. ✓ Hydraulic test pressure: tubes 1,000 lb/sq.in. forgings and castings 675 lb/sq.inch. and after assembly in place 675 lb/sq.inch. Are drain cocks or valves fitted to free the superheater from water where necessary Yes ✓

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes ✓ JOY, AMOS & SMITH LTD.

The foregoing is a correct description,
R. L. Kearney Manufacturer.
 Boiler 24.4.72.

Dates of Survey while building During progress of work in shops - - 1953 Feb 2 Mar 29 Aug 31 Sept 2 29 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Superheater 10.1.50 (for "Lord Lovat")

During erection on board vessel - - Oct 19 Nov 14 24 Total No. of visits 8

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "LORD LOVAT" Rpt. No. 57290.

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

The boiler has been constructed and installed under Special Survey in accordance with the Secretary's letters, approved plans and the Rules. The materials and workmanship are good. The boiler was examined under hyd. test of 388 lbs. per square inch on completion and found tight and sound.

The safety valves were adjusted under steam to 230 lb per square inch and an accumulation test was carried out with satisfactory results.

The steam smothering system was tested and found satisfactory.

Survey Fee ... SEE MACHINERY } When applied for.....19.....
 Travelling Expenses (if any) £ REPORT.. } When received.....19.....

A. Wood
 Engineer Surveyor to Lloyd's Register of Shipping.

FRIDAY 29 JAN 1954

Committee's Minute.....

Assigned See Rpt. 4.