

REPORT ON BOILERS.

No. 45298

Received at London Office

27 NOV 1934

Date of writing Report

19

When handed in at Local Office

28 NOV 1934

Port of

HULL

No. in Survey held at
Reg. Book.

Hull

Date, First Survey 24th August 1934 Last Survey 22nd Nov. 1934

(Number of Visits

Gross 484.92

Net 189.08

on the Steel sc K. "Pentland Firth"

Master Built at Beverley By whom built Cook Welton & Gemmell Yard No. 577 When built 1934-11

Engines made at Hull By whom made Charles D. Holmes & Co. Ltd. Engine No. 1467 When made 1934

Boilers made at Hull By whom made Charles D. Holmes & Co. Ltd. Boiler No. 1467 When made 1934

Nominal Horse Power 154 Owners Firth Steam Trawling Co. Ltd Port belonging to Hull.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby Iron Co. Ltd. (Letter for Record "S")

Total Heating Surface of Boilers 2402 sq ft. Is forced draught fitted Yes Coal or Oil fired coal

No. and Description of Boilers One Single Ended Return Tube Working Pressure 215 #0

Tested by hydraulic pressure to 373 #0 Date of test 9-10-34 No. of Certificate 3900 Can each boiler be worked separately

Area of Firegrate in each Boiler 60.5 sq ft No. and Description of safety valves to each boiler 2 Spring loaded.

Area of each set of valves per boiler { per Rule 15.25 sq inches as fitted 16.58 " Pressure to which they are adjusted 215 #0 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 11 1/2" 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 Yes.

Largest internal dia. of boilers 186" Length 11'6" Shell plates: Material Steel Tensile strength 31/35 tons

Thickness 1 3/8" Are the shell plates welded or flanged Description of riveting: circ. seams { end 3 3/4" inter. 9 1/8"

long. seams J.R.D.B.S. Diameter of rivet holes in { circ. seams 1 13/32" long. seams Pitch of rivets { 3 3/4" 9 1/8"

Percentage of strength of circ. end seams { plate 62.50 rivets 88.50 Percentage of strength of circ. intermediate seam { plate 84.58 rivets 86.10

Percentage of strength of longitudinal joint { rivets 86.10 combined 86.50 Working pressure of shell by Rules 215 #0

Thickness of butt straps { outer 1 1/16" inner 1 3/16" No. and Description of Furnaces in each Boiler 3 Corrugated (Seighton)

Material Steel Tensile strength 26/30 tons Smallest outside diameter 45.125"

Length of plain part { top 1 1/16" bottom 1 3/16" Thickness of plates { crown 1 1/16" bottom 1 1/16" Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 223 #0

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 3/16" Pitch of stays { 18 1/4" x 18 3/4" 19" x 17 1/4" 19 3/4" x 17 1/4"

How are stays secured Double nuts and washers Working pressure by Rules 215 #0

Tube plates: Material { front Steel back Steel Tensile strength 26/30 tons Thickness { 15/16" 7/8"

Mean pitch of stay tubes in nests 10.62" Pitch across wide water spaces 14 1/2" Working pressure { front 228 #0 back 249 #0

Girders to combustion chamber tops: Material Steel Tensile strength 29/33 tons Depth and thickness of girder

at centre 9 1/2" x 1 3/4" Length as per Rule 2' 11 15/16" Distance apart centre 8" Kings 9" x 8 1/2" No. and pitch of stays

in each 3 @ 8 1/2" Working pressure by Rules 219 #0 Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 33/32" Back 1/16" Top 1/16" Bottom 13/16"

Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back 8 3/4" x 8 1/2" Top 9" x 8 1/2" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 215 #0 Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 15/16" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 7/8"

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

Working Pressure 226 #0 Main stays: Material Steel Tensile strength 28 minimum

Diameter { At body of stay, 3 1/4" No. of threads per inch 8 Area supported by each stay 351 sq inches

Working pressure by Rules 228 #0 Screw stays: Material Steel Tensile strength 26 minimum

Diameter { At turned off part, 1 3/4" No. of threads per inch 10 Area supported by each stay 76 sq inches

W11353-0170

Working pressure by Rules **239 #a** Are the stays drilled at the outer ends **no** Margin stays: Diameter **At turned off part, 1 7/8", 2" + 2 1/8"**
 No. of threads per inch **10** Area supported by each stay **99 sq inches** Working pressure by Rules **215 #a**
 Tubes: Material **L.M. Iron** External diameter **3 1/4"** Thickness **5/16", 3/8" + 7/16"** No. of threads per inch **9**
 Pitch of tubes **4 5/8" x 4 1/2"** Working pressure by Rules **230 #a** Manhole compensation: Size of opening
 shell plate **16" x 12"** Section of compensating ring **4' 10" dia by 1 3/8"** No. of rivets and diameter of rivet holes **106 @ 1 3/32"**
 Outer row rivet pitch at ends **4' 5 3/4" p.c.** Depth of flange if manhole flanged **(Dome) 3 1/4"** Steam Dome: Material **Steel**
 Tensile strength **26/30 tons** Thickness of shell **3/4"** Description of longitudinal joint **S.R. lap.**
 Diameter of rivet holes **1 1/32"** Pitch of rivets **2 1/4"** Percentage of strength of joint **Plate 54.00**
 Internal diameter **33"** Working pressure by Rules **230 #a** Thickness of crown **7/8"** Rivets **43.80**
 stays **2 @ 2 1/4"** Inner radius of crown **✓** Working pressure by Rules **230 #a** No. and diameter of
 How connected to shell **Riveted** Size of doubling plate under dome **4' 10" dia x 1 3/8"** Diameter of rivet holes and pitch
 of rivets in outer row in dome connection to shell **1 1/32" 3' 9 1/4" p.c. (36 rivets)**
 Type of Superheater **Smoke tube type by Superheater Co. Ltd.** Manufacturers of Tubes } **Please see m/c certificates**
 Number of elements **57** Material of tubes **S.D. Steel** Steel castings } **No. C 3502**
 Material of headers **Steel forging** Tensile strength **✓** Internal diameter and thickness of tubes **17 mm. 2.5 mm**
 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** Can the superheater be shut off and
 Area of each safety valve **1.767 sq inches** Are the safety valves fitted with easing gear **Yes** Working pressure as per
 Rules **approved for 215 #a** Pressure to which the safety valves are adjusted **217 #a** Hydraulic test pressure:
 tubes **1000 #a** castings **645 #a** and after assembly in place **645 #a** 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**

The foregoing is a correct description,
 For CHARLES D. HOLMES & CO., LTD.
 Manufacturer.

Dates of Survey **During progress of work in shops - -**
 while building **During erection on board vessel - -**
See mch Rpt. Are the approved plans of boiler and superheater forwarded herewith **Yes**
 (If not state date of approval.)
 Total No. of visits **✓**

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This boiler has been built under special survey and in accordance with the approved plan. It has been satisfactorily fitted on board, tried under steam and its safety valves adjusted as above.**

The boiler's plans forwarded herewith refer also to Boiler No 1470 to be reported shortly.

changed on engine report herewith.

Survey Fee **£** When applied for, **19**
 Travelling Expenses (if any) **£** When received, **19**

C. Croft
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 30 NOV 1934**

Assigned **See other Rpt**
Sub F.E. 45298