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N D.O.

# REPORT ON BOILERS.

No. 73219

Received at London Office 3 SEP 1948

Date of writing Report 17 SEP 1948 When handed in at Local Office 19 SEP 1948 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 24 FEB. 1948 Last Survey 31 August 1948

Reg. Book. on the MERSAY ENGINEER "BUCKET DREDGER" (Number of Visits SIX) Tons {Gross Net

Master Built at Port Glasgow By whom built Ferguson Bros Yard No. 388 When built 1948

Engines made at By whom made Engine No. When made

Boilers made at Glasgow By whom made D. Rowan & Co Ltd Boiler No. 3519 When made 1948.

Nominal Horse Power 233. Owners Port belonging to

## MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR DONKEY.

Manufacturers of Steel Colvilles Ltd. (Letter for Record 5)

Total Heating Surface of Boilers 1750 sq. ft. Each. Is forced draught fitted No. Coal or Oil fired oil

No. and Description of Boilers 2 Single Endel K&B Tube. Working Pressure 180 lbs/sq. in.

Tested by hydraulic pressure to 320 lbs/sq. in. Date of test 22.6.48 No. of Certificate 22704 Can each boiler be worked separately Yes.

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

Area of each set of valves per boiler {per Rule as fitted} Pressure to which they are adjusted 50 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 13' 3" Length 10' Shell plates: Material Steel Tensile strength 29-33 T.

Thickness 1 1/16" Are the shell plates welded or flanged Description of riveting: circ. seams {end inter.} DR 3.084

long. seams TR. DGS. Diameter of rivet holes in {circ. seams 1 1/16" long. seams 1 1/8"} Pitch of rivets {plate rivets} 7.750

Percentage of strength of circ. end seams {plate rivets} 66.5 43.2 Percentage of strength of circ. intermediate seam {plate rivets}

Percentage of strength of longitudinal joint {plate rivets combined} 85.5 89.5 89.9 Working pressure of shell by Rules 181.2 lbs/sq. in.

Thickness of butt straps {outer 5/16" inner 3/16"} No. and Description of Furnaces in each Boiler 2 Beighton

Material Steel Tensile strength 26-30 T. Smallest outside diameter 4'-1 1/16"

Length of plain part {top bottom} Thickness of plates {crown bottom} 2 1/32" Description of longitudinal joint welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 194.5 lbs/sq. in.

End plates in steam space: Material Steel Tensile strength 26-30 T. Thickness 1 1/16" Pitch of stays 15 3/4" x 18"

How are stays secured nuts back & front Working pressure by Rules 182 lbs/sq. in.

Tube plates: Material {front back} Steel Tensile strength {26-30 T 26-30 T} Thickness {27/32 23/32}

Mean pitch of stay tubes in nests 10 3/8" x 8 1/4" Pitch across wide water spaces 14" Working pressure {front back} 184 lbs/sq. in. 207 lbs/sq. in.

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 T. Depth and thickness of girder

at centre (7 3/8") x 2 Length as per Rule 29.68" Distance apart 9 3/4" No. and pitch of stays

in each 2 @ 9 1/2" Working pressure by Rules 184 lbs/sq. in. Combustion chamber plates: Material Steel

Tensile strength 26-30 T Thickness: Sides 23/32 Back 19/32 Top 23/32 Bottom 23/32

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

Working pressure by Rules 190 lbs/sq. in. Front plate at bottom: Material Steel Tensile strength 26-30 T

Thickness 27/32 Lower back plate: Material Steel Tensile strength 26-30 T Thickness 25/32

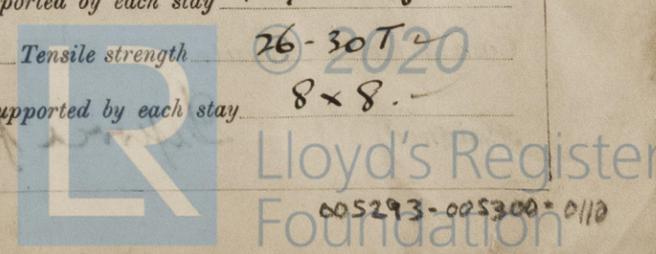
Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over nuts

Working Pressure 180 lbs/sq. in. Main stays: Material Steel Tensile strength 28-32 T.

Diameter {At body of stay, or Over threads} 2 1/2" No. of threads per inch 6 Area supported by each stay 15 3/4" x 18"

Working pressure by Rules 189 lbs/sq. in. Screw stays: Material Steel Tensile strength 26-30 T

Diameter {At turned off part, or Over threads} 1 1/2", 1 3/4", 2 No. of threads per inch 9 Area supported by each stay 8 x 8.



Working pressure by Rules 196/1650 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads } 1 3/4, 2  
 No. of threads per inch 9 Area supported by each stay 10 1/2 x 8 Working pressure by Rules 221/1650  
 Tubes: Material Steel External diameter { Plain 3 Stay 3 } Thickness { 9/16 } No. of threads per inch 9  
 Pitch of tubes 4 1/4 x 4 1/8 Working pressure by Rules 224/1650 Manhole compensation: Size of opening in shell plate 19 x 10 Section of compensating ring 12 3/4 x 1 1/6 No. of rivets and diameter of rivet holes 36 @ 1 1/8  
 Outer row rivet pitch at ends 7 3/4 Depth of flange if manhole flanged 3 Steam Dome: Material ✓  
 Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓  
 Diameter of rivet holes 8/16 Pitch of rivets ✓ Percentage of strength of joint { Plate ✓ Rivets ✓ }  
 Internal diameter ✓ Working pressure by Rules ✓ Thickness of crown ✓ No. and diameter of stays ✓  
 How connected to shell ✓ Inner radius of crown ✓ Working pressure by Rules ✓  
 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 casing gear \_\_\_\_\_ Working pressure as per Rules \_\_\_\_\_  
 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.

The foregoing is a correct description,  
 For David Rowan & Co. Ltd Manufacturer.  
Arch. N. Grierson

Dates of Survey { During progress of work in shops - - } 1948, Feb 24, Mar 10, May 25, June 22, 23 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 { During erection on board vessel - - } Aug 31  
 Total No. of visits 6 (in shops)

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.)

*These Boilers have been built under Special License in accordance with the Rules & the approved plans & the materials & workmanship are good. The Boilers are to be despatched to Port Glasgow for installation in Messrs Ferguson Bros yard n° 388*

*These boilers have been efficiently installed in the vessel & their safety valves adjusted under steam to 485 lbs/sq in for recommendations please see Greenock first entry report n° 23851.*

*Charles J. Hunter*  
 Greenock  
 8/9/49

Survey Fee ... £ 46.12.0 } When applied for, 19  
 Travelling Expenses (if any) £ ✓ : } When received, 19

21 SEP 1948

*A. H. ...*  
 Engineer Surveyor to Lloyd's Register of Shipping.

14 SEP 1949

Committee's Minute GLASGOW  
 Assigned Deferred for completion

