

REPORT ON BOILERS.

No. 20662.

Received at London Office DEC -7 1938

Date of writing Report 3. 10 1938 When handed in at Local Office 2nd Dec. 1938. Port of CremackNo. in Reg. Book. Survey held at Cremack Date, First Survey 20th January 1938 Last Survey 1 - 12 1938
on the T/S's Blau Forbes (Number of Visits) Tons { Gross 1529.34
Net 3524.04Master Cremack Built at Cremack By whom built Cremack Dockyard Ltd Yard No. 434 When built 1938
Engines made at Cremack By whom made John E. McCandless & Co Engine No. 693 When made 1938
Boilers made at ditto By whom made ditto Boiler No. 693 When made 1938
Nominal Horse Power - Owners Robt Blair & Co Ltd
Cayman Islands (Maugn) Port belonging to GlasgowMULTITUBULAR BOILERS—MAIN, ~~XXXXXXXXXXXX~~

Manufacturers of Steel Steel Co of Scotland & Co Ltd (Letter for Record S)
 Total Heating Surface of Boilers 17780 [#] Is forced draught fitted yes Coal & Oil fired both
 No. and Description of Boilers 5 Single Ended Working Pressure 220
 Tested by hydraulic pressure to 380 Date of test 22. 9. 38 No. of Certificate CF 2162
22. 9. 38 SF 2160 PF 2161 CA 2156 Can each boiler be worked separately yes
 Area of Firegrate in each Boiler 80.5 [#] No. and Description of safety valves to each boiler 2 Cochran Improved High Lift
 Area of each set of valves per boiler { per Rule 9.45 [#] as fitted 9.82 [#] Pressure to which they are adjusted 225 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 1'-6" Is oil fuel carried in the double bottom under boilers no
 Smallest distance between shell of boiler and tank top plating 1'-10" Is the bottom of the boiler insulated yes
 Largest internal dia. of boilers 16'-8 3/4" Length 12'-0" Shell plates: Material S Tensile strength 29.33
 Thickness 1 5/8" Are the shell plates welded or flanged - Description of riveting: circ. seams { end DR
inter. -
 long. seams TR & DBS Diameter of rivet holes in { circ. seams 1 2/32"
long. seams 1 5/8" Pitch of rivets { 4.644
10 3/4"
 Percentage of strength of circ. end seams { plate 64.5
rivets 45.4 Percentage of strength of circ. intermediate seam { plate -
rivets 84.58
 Percentage of strength of longitudinal joint { plate 86.1
combined 87.38 Working pressure of shell by Rules 224
 Thickness of butt straps { outer 1 1/4"
inner 1 3/8" No. and Description of Furnaces in each Boiler 4 Deighton
 Material S Tensile strength 26.30 Smallest outside diameter 3'-7 5/16"
 Length of plain part { top -
bottom - Thickness of plates { crown 2 1/32" Description of longitudinal joint weld
bottom -
 Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 228
 End plates in steam space: Material S Tensile strength 26.30 Thickness 1 1/4" Pitch of stays 20" 16"
 How are stays secured DN + Washers Working pressure by Rules 222
 Tube plates: Material { front S
back S Tensile strength { 26.30 Thickness { 1 5/16"
2 5/32"
 Mean pitch of stay tubes in nests 9.656" Pitch across wide water spaces 14" Working pressure { front 224
back 234
 Girders to combustion chamber tops: Material S Tensile strength 29.33 Depth and thickness of girder
 at centre 10 1/4" x 3 1/4" (2) Length as per Rule 34. 17/32" Distance apart 8 1/2" No. and pitch of stays
 in each 3 at 8 1/4" Working pressure by Rules 251 Combustion chamber plates: Material S
 Tensile strength 26.30 Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 3/16"
 Pitch of stays to ditto: Sides 8 1/4" x 8 1/2" Back 8 1/4" x 8 1/2" Top 8 1/4" x 8 1/2" Are stays fitted with nuts or riveted over nuts
 Working pressure by Rules 229 Front plate at bottom: Material S Tensile strength 26.30
 Thickness 1 5/16" Lower back plate: Material S Tensile strength 26.30 Thickness 7/8"
 Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over nuts
 Working Pressure 223 Main stays: Material S Tensile strength 28.32
 Diameter { At body of stay, 3"
or - No. of threads per inch 6 Area supported by each stay 320 [#]
Over threads -
 Working pressure by Rules 245 Screw stays: Material S Tensile strength 26.30
 Diameter { At turned off part, 1 3/4"
or - No. of threads per inch 9 Area supported by each stay 42.25 [#]
Over threads -

Working pressure by Rules 250 Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 7/8" or Over threads ✓

No. of threads per inch 9 Area supported by each stay 95 sq" Working pressure by Rules 224

Tubes: Material S External diameter { Plain 3" Stay 3" Thickness { 8 WG 9/32" 11/32" No. of threads per inch 9

Pitch of tubes 4 1/8", 4 1/4" Working pressure by Rules 231 Manhole compensation: Size of opening in shell plate 16 1/2" x 20 1/2" Section of compensating ring 3-3-3-0 + 1 5/8" No. of rivets and diameter of rivet holes 36 at 1 2 1/32"

Outer row rivet pitch at ends 11 1/4" Depth of flange if manhole flanged 3 3/4" 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 Working pressure by Rules Thickness of crown No. and diameter of stays

Inner radius of crown Working pressure by Rules

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 North Eastern Marine Manufacturers of { Tubes Steel forgings Steel castings

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers For particular see Newcastle Coal 80 1/4 66 attached 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 3.1416 sq" Are the safety valves fitted with easing gear yes Working pressure as per Rules 220 Pressure to which the safety valves are adjusted 220 Hydraulic test pressure: tubes 440 lb" forgings and castings 440 lb" and after assembly in place yes 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 JOHN G. KINCAID & CO. LIMITED. W. Carter Director. Manufacturer.

Dates of Survey { During progress of work in shops - - } Sept. Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)

while building { During erection on board vessel - - } See Machinery Total No. of visits ✓

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. T/Ss "Blau Buchanan" Enk 12/1/19: 20514

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been built under Special Survey in accordance with the rules, approved plans & the workmanship, material are of good quality. They have now been securely fitted on board. This Report accompanies that of the Machinery.

Survey Fee charged on Machinery } When applied for, 19
Travelling Expenses (if any) £ } When received, 19

W. Gordon Maclean
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6-DEC 1938

Assigned See F. C. Macley Report



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