

REPORT ON BOILERS.

No. 50557

Received at London Office

18 JUN 1930

Date of writing Report 102 When handed in at Local Office 16.8.30 Port of Glasgow

No. in Reg. Book. Survey held at Glasgow Date, First Survey 25.10.29 Last Survey 9.6.1930

on the new steel S/S BENLEDI (Number of Visits 80) Gross 5943 Tons Net 3755

Master Built at Glasgow By whom built Hasbomell & Co Yard No. 419 When built 1930

Engines made at Glasgow By whom made David Rowan & Co Ltd Engine No. 929 When made 1930

Boilers made at Glasgow By whom made David Rowan & Co Ltd Boiler No. 929 When made 1930

Nominal Horse Power 675 Owners Ben Line Steamers Ltd Port belonging to Leith

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Gutehoffnungshütte a.s. Oberhausen. Gas Dunlop & Co Ltd (Letter for Record (S))

Total Heating Surface of Boiler 1700 sq ft Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers one single ended marine 1 (Aux) SB Working Pressure 220

Tested by hydraulic pressure to 380 Date of test 4.4.30 No. of Certificate 18670 Can each boiler be worked separately -

Area of Firegrate in each Boiler 53.6 sq ft No. and Description of safety valves to each boiler two Improved high lift

Area of each set of valves per boiler per Rule 4.52 sq ft as fitted 4.80 sq ft 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 2'-3" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-4" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 13'-6" Length 11'-0" Shell plates: Material steel Tensile strength 28-32 tons

Thickness 1 1/32" Are the shell plates welded or flanged no Description of riveting: circ. seams end DR

long. seams NBS TR Diameter of rivet holes in circ. seams F 1 5/16" B 1 3/8" Pitch of rivets F 3.42" B 3.63"

Percentage of strength of circ. end seams plate F 61.4 B 64.1 rivets F 48.7 B 48.7 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 85.8 rivets 87.4 combined 89 Working pressure of shell by Rules 221

Thickness of butt straps outer 1" inner 1 1/8" No. and Description of Furnaces in each Boiler 3 Deighton

Material steel Tensile strength 26-30 tons Smallest outside diameter 40 3/16"

Length of plain part top bottom Thickness of plates crown 3/32" bottom 3/64" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 224

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1/4" Pitch of stays 19" x 17 3/8"

How are stays secured DN Working pressure by Rules 220

Tube plates: Material front steel back Tensile strength 26-30 tons Thickness 15/16" 13/16"

Mean pitch of stay tubes in nests 10 1/4" Pitch across wide water spaces 14" Working pressure front 222 back 226

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 2 @ 7 3/4" x 7/8" Length as per Rule 3 1/2" Distance apart 8 3/8" No. and pitch of stays

in each 2 @ 10" Working pressure by Rules 220 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 41/64" Back 1/16" Top 41/64" Bottom 21/32"

Pitch of stays to ditto: Sides 10" x 8 3/8" Back 8 1/4" x 8 1/4" Top 8 3/8" x 10" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 223 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 13/16"

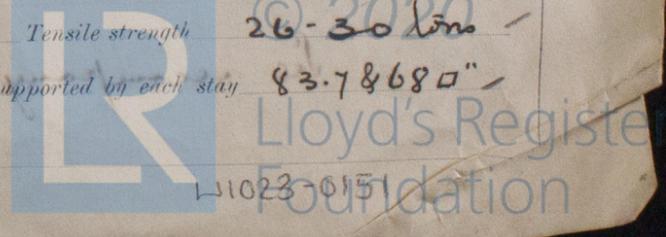
Pitch of stays at wide water space 13 1/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 223 Main stays: Material steel Tensile strength 28-32 tons

Diameter At body of stay, 3 & 2 3/4" No. of threads per inch 6 Area supported by each stay 339 & 295 sq in

Working pressure by Rules 231 & 222 Screw stays: Material steel Tensile strength 26-30 tons

Diameter At turned off part, 1 3/4" & 1 5/8" No. of threads per inch 9 Area supported by each stay 83.7 & 68.0 sq in



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Working pressure by Rules 222 & 224 Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part.} 7/8" or ^{Over threads} 1 1/8"

No. of threads per inch 9 Area supported by each stay 88.6 sq" Working pressure by Rules 242

Tubes: Material Iron External diameter ^{Plain} 3 1/4" Thickness ^{Stay} 3/4" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 280 Manhole compensation: Size of opening in shell plate 19 1/2" x 15 1/2" Section of compensating ring 9 1/4" x 3 1/2" No. of rivets and diameter of rivet holes 32 @ 1 3/8"

Outer row rivet pitch at ends 9 1/16" Depth of flange if manhole flanged 3" Steam Dome: Material none

Tensile strength PIA Thickness of shell PIA Description of longitudinal joint PIA

Diameter of rivet holes PIA Pitch of rivets PIA Percentage of strength of joint ^{Plate} PIA ^{Rivets} PIA

Internal diameter PIA Working pressure by Rules PIA Thickness of crown PIA No. and diameter of stays PIA

How connected to shell PIA Inner radius of crown PIA Working pressure by Rules PIA

Size of doubling plate under dome PIA Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell PIA

Type of Superheater none Manufacturers of ^{Tubes} PIA ^{Steel castings} PIA

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

Material of headers PIA Tensile strength PIA Thickness PIA Can the superheater be shut off and the boiler be worked separately PIA

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler PIA

Area of each safety valve PIA Are the safety valves fitted with casing gear PIA Working pressure as per Rules PIA

Pressure to which the safety valves are adjusted PIA Hydraulic test pressure: tubes PIA castings PIA and after assembly in place PIA Are drain cocks or valves fitted to free the superheater from water where necessary PIA

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.
Dick - W. Grierson

Dates of Survey ^{During progress of work in shops - -} See accompanying Are the approved plans of boiler and superheater forwarded herewith yes
^{while building} ^{During erection on board vessel - -} machinery report (If not state date of approval.)

Total No. of visits 80

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

The materials and workmanship are good.
 The boiler has been constructed under special survey in accordance with the Rules, satisfactorily fitted in the vessel and its safety valves adjusted under steam.

A.L.
16/6/30

[Faint handwritten notes and scribbles]

Survey Fee ... £ see machy Rpt. When applied for. 192

Travelling Expenses (if any) £ see machy Rpt. When received. 192

S. C. Davis.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 17 JUN 1930

Assigned See accompanying machinery report

