

REPORT ON BOILERS.

No. 79233

Received at London Office *20 MAY 1925*

Date of writing Report *1925* When handed in at Local Office *14/5/1925* Port of *Newcastle-on-Tyne*

No. in Survey held at *Newcastle-on-Tyne* Date, First Survey *6th Aug 1924* Last Survey *1st May 1925*

Reg. Book. *89297* on the *INANDA* (Number of Visits *—*) (Gross Tons *—*) (Net Tons *—*)

Master *—* Built at *Newcastle* By whom built *Richardson & Hunter Higham* Yard No. *1259* When built *1925*

Engines made at *Newcastle* By whom made *Walkend Slipway & Eng. Co. Ltd.* Engine No. *856* When made *1925*

Boilers made at *Newcastle* By whom made *Walkend Slipway & Eng. Co. Ltd.* Boiler No. *856* When made *1925*

Nominal Horse Power *605 606.* Owners *T. J. Harrison* Port belonging to *Liverpool*

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *David Colville & Son Ltd.* (Letter for Record *✓*)

Total Heating Surface of Boilers *8264 sq ft* Is forced draught fitted *no.* Coal or Oil fired *Coal.*

No. and Description of Boilers *Two Double-Ended Cylindrical* Working Pressure *220 lbs.*

Tested by hydraulic pressure to *380 lbs.* Date of test *16-1-25* No. of Certificate *9885* Can each boiler be worked separately *Yes*

Area of Firegrate in each Boiler *110 sq ft* No. and Description of safety valves to each boiler *Two Spring-loaded*

Area of each set of valves per boiler { per Rule *22.02 sq ft* as fitted *25.12 sq ft* Pressure to which they are adjusted *225 lbs.* Are they fitted with easing gear *Yes*

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler *none*

Smallest distance between boilers or uptakes and bunkers or woodwork *60"* Is oil fuel carried in the double bottom under boilers *no.*

Smallest distance between shell of boiler and tank top plating *24 1/2"* Is the bottom of the boiler insulated *Yes*

Largest internal dia. of boilers *189"* Length *17'-9"* Shell plates: Material *Steel* Tensile strength *30-34 Tons*

Thickness *1 1/2"* Are the shell plates welded or flanged *no.* Description of riveting: circ. seams { end *Double* inter. *Treble*

long. seams *Treble - S.B.S.* Diameter of rivet holes in { circ. seams *1 5/8"* long. seams *1 5/8"* Pitch of rivets { *4 1/2"* *10 5/8"*

Percentage of strength of circ. end seams { plate *65%* rivets *45.6* Percentage of strength of circ. intermediate seam { plate *65%* rivets *68.4*

Percentage of strength of longitudinal joint { plate *84%* rivets *93* combined *88* Working pressure of shell by Rules *223 lbs.*

Thickness of butt straps { outer *1 5/16"* inner *1 5/16"* No. and Description of Furnaces in each Boiler *Six Morrison*

Material *Steel* Tensile strength *26-30 Tons* Smallest outside diameter *45 3/8"*

Length of plain part { top *✓* bottom *✓* 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 lbs.*

End plates in steam space: Material *Steel* Tensile strength *26-30 Tons* Thickness *1 3/32"* Pitch of stays *38 1/8 x 16 3/4"*

How are stays secured *Double Nuts* Working pressure by Rules *229 lbs.*

Tube plates: Material { front *Steel* back *Steel* Tensile strength { *26-30 Tons* Thickness { *1"*

Mean pitch of stay tubes in nests *13 3/16"* Pitch across wide water spaces *14 1/4"* Working pressure { front *232 lbs.* back *224 lbs.*

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

at centre *11 3/4" - 1 1/2"* Length as per Rule *44"* Distance apart *7 3/4"* No. and pitch of stays

in each *3m 8 1/2"* Working pressure by Rules *227 lbs.* Combustion chamber plates: Material *Steel*

Tensile strength *26-30 Tons* Thickness: Sides *3/32"* Back *✓* Top *2 1/32"* Bottom *3/32"*

Pitch of stays to ditto: Sides *8 1/8" x 7 3/4"* Back *✓* Top *8 1/8" x 7 3/4"* Are stays fitted with nuts or riveted over *Nuts*

Working pressure by Rules *227 lbs.* Front plate at bottom: Material *Steel* Tensile strength *26-30 Tons*

Thickness *1"* Lower back plate: Material *Steel* Tensile strength *26-30 Tons* Thickness *1"*

Pitch of stays at wide water space *none* Are stays fitted with nuts or riveted over *✓*

Working Pressure *✓* Main stays: Material *Steel* Tensile strength *28-32 Tons*

Diameter { At body of stay, *3"* or Over threads *3"* No. of threads per inch *Six* Area supported by each stay *301.5 sq in.*

Working pressure by Rules *223 lbs.* Screw stays: Material *Iron* Tensile strength *21 1/2 Tons min.*

Diameter { At turned off part, *1 3/4"* or Over threads *1 3/4"* No. of threads per inch *Nine* Area supported by each stay *65.875 sq in.*

Working pressure by Rules 275 lb Are the stays drilled at the outer ends Yes Margin stays: Diameter { At turned off part, None
No. of threads per inch 11 Area supported by each stay 3 1/2" Working pressure by Rules 275 lb
Tubes: Material low External diameter { Plain 3 1/2" Thickness { 1/8" - 5/16" No. of threads per inch 11
Pitch of tubes 4 3/8" Working pressure by Rules plain 260 lb stay 244 lb Manhole compensation: Size of opening 36-1 5/8"
shell plate 19" x 15" Section of compensating ring 35 1/2" - 37 1/8" x 1 1/2" No. of rivets and diameter of rivet holes 36-1 5/8"
Outer row rivet pitch at ends 10 5/8" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material None
Tensile strength Thickness of shell Description of longitudinal joint
Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate
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 Nash Eastern Marine Eng. Co. Ltd. Manufacturers of { Tubes Weldless Steel Tube Co. Ltd.
Number of elements 196 Material of tubes S.D. Steel Internal diameter and thickness of tubes 17 mm. 2 1/2 mm.
Material of headers Angled S.D. Steel Tensile strength 26-30 tons Thickness 1 1/8" 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 ft Are the safety valves fitted with easing gear Yes Working pressure as per
Rules 220 lbs Pressure to which the safety valves are adjusted 230 lbs Hydraulic test pressure
tubes 1500 lb Headers 600 lbs and after assembly in place 440 lbs Are drain cocks or valves fitted
to free the superheater from water where necessary Yes

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes

The foregoing is a correct description,
K. Lang Manufacturer

Dates of Survey { During progress of work in shops - -
while building { During erection on board vessel - - -

See Machinery Report.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
Total No. of visits

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

These boilers were constructed under special survey and in accordance with the approved plans. The materials and workmanship are sound and good. They were satisfactorily subjected to a hydraulic pressure test & efficiently fastened on board. The main and superheater safety valves were adjusted under steam. In my opinion the vessel is now eligible for notation - L.M.C. H. 25. C.L.

Survey Fee ... £ See Machinery Report. When applied for, 192
Travelling Expenses (if any) £ : : When received, 192

Lee Armes

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 29 MAY 1921

Assigned



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