

REPORT ON BOILERS.

No. 99657

31 JUL 1941

Date of writing Report

19

When handed in at Local Office

14/7/1941

Port of

Received at London Office

NEWCASTLE-ON-TYNE

No. in Reg. Book

Survey held at Newcastle on Tyne

Date, First Survey

11/12/39

Last Survey

3/7/1941

on the S/S ENNERDALE

(Number of Visits)

Gross 8219
Net 4719

Master _____ Built at Newcastle By whom built Swan, Hunter and Wigham Richardson Ltd Yard No. 1656 When built 1940-
 Engines made at Newcastle By whom made ditto Engine No. 1656 When made 1941-
 Boilers made at do By whom made ditto Boiler No. 1656 When made 1941-
 Nominal Horse Power _____ Owners _____ Port belonging to LONDON.

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

Manufacturers of Steel The Steel Coy. of Scotland, and Colvilles Ld. (Letter for Record S.)

Total Heating Surface of Boilers 9555 Is forced draught fitted Yes Coal or Oil fired oil fired Working Pressure 220 lbs

No. and Description of Boilers Three Single Ended

Tested by hydraulic pressure to 380 lbs Date of test 26/2/41 No. of Certificate 883 + 884 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler oil fired No. and Description of safety valves to each boiler Two of 2 1/2" dia. Cockburns Imp'd High Lift.

Area of each set of valves per boiler {per Rule 8.47 sq ft as fitted 9.8 " Pressure to which they are adjusted 220 lbs 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 12" Is oil fuel carried in the double bottom under boilers Yes

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

Largest internal dia. of boilers 16'-2 31/32" Length 11'-9" mean Shell plates: Material Steel Tensile strength 30 to 34 tons

Thickness 1 33/64" Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R. overlap inter. none

long. seams T.R. dbl butt straps Diameter of rivet holes in {circ. seams 1 9/16" long. seams 1 7/16" Pitch of rivets {4.60 10 1/2" (Rule max 10.72)

Percentage of strength of circ. end seams {plate 66.03 rivets 42.17 Percentage of strength of circ. intermediate seam {plate rivets none

Percentage of strength of longitudinal joint {plate 85.11 rivets 86.60 combined 87.55 Working pressure of shell by Rules 221 lbs

Thickness of butt straps {outer 1 5/32" inner 1 9/32" No. and Description of Furnaces in each Boiler Three Deighton corrugated

Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 4'-1 1/8"

Length of plain part {top 4 1/2" bottom 2'-7 1/2" ac bottom Thickness of plates {crown 3/4" bottom 3/4" Description of longitudinal joint fire welded

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 224 lbs

End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 1 7/32" Pitch of stays 15" x 19 1/2"

How are stays secured Nuts inside + outside Working pressure by Rules 228 lbs

Tube plates: Material {front back Steel Tensile strength 26 to 30 tons Thickness 1" 27/32"

Mean pitch of stay tubes in nests 10 5/8" Pitch across wide water spaces 14" Working pressure {front 257 lbs back 226 lbs

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

at centre 9 7/8" x 3/4" x two Length as per Rule 2'-9 15/16" Distance apart 8 3/4" No. and pitch of stays

in each 3 @ 8" Working pressure by Rules 225 lbs Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 7/8"

Pitch of stays to ditto: Sides 10" x 8" Back 9 1/4" x 8 1/2" Top 8 3/4" x 8" Are stays fitted with nuts or riveted over with nuts

Working pressure by Rules 221 lbs min. Front plate at bottom: Material Steel Tensile strength 26 to 30 tons

Thickness 1" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 1/16"

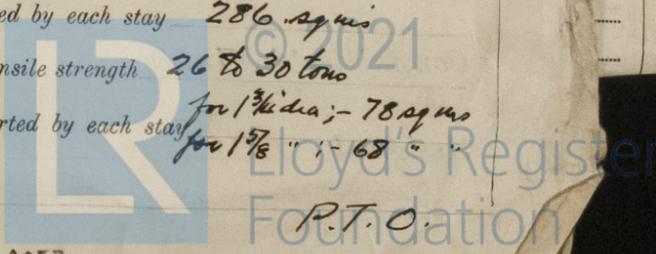
Pitch of stays at wide water space 17 1/4" x 8 1/4" max. 14" Are stays fitted with nuts or riveted over with nuts

Working Pressure 256 lbs min Main stays: Material Steel Tensile strength 28 to 32 tons

Diameter {At body of stay, or Over threads 3" dia No. of threads per inch 6 Area supported by each stay 286 sq ins

Working pressure by Rules 234 lbs Screw stays: Material Steel Tensile strength 26 to 30 tons

Diameter {At turned-off part, or Over threads 1 3/4" + 1 5/8" No. of threads per inch 9 Area supported by each stay for 1 3/4" dia - 78 sq ins for 1 5/8" - 68 "



Working pressure by Rules $(\frac{13}{4}) = 232$ lbs ✓
 No. of threads per inch 9 ✓ Area supported by each stay 105 sq ins ✓ Working pressure by Rules 234 lbs ✓
 Tubes: Material S.D. Steel ✓ External diameter { Plain 3" ✓ Stay 3" ✓ Thickness { No 8 W.G. ✓ 5/16 & 3/8" ✓ No. of threads per inch 9 ✓
 Pitch of tubes 4 1/4" x 4 1/4" ✓ Working pressure by Rules 224 lbs ✓ Manhole compensation: Size of opening in shell plate 20" x 16" on 7/8" B.L. only. Section of compensating ring 10 7/8" x 1 3/4" x two No. of rivets and diameter of rivet holes 32 g 1/16" ✓
 Outer row rivet pitch at ends 12" ✓ Depth of flange if manhole flanged 3" ✓ 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 Smoke tube type Manufacturers of { Tubes Galbot Stead Co. ✓ Steel forgings Frodingham Steel Co. ✓ Steel castings ✓
 Number of elements 204 Material of tubes Steel (Solid drawn) Internal diameter and thickness of tubes 15 m/ins bore, 2 1/2 m/ins thick. ✓
 Material of headers J. Steel Tensile strength 26 to 30 tons Thickness 1 7/8" 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 ~~2.97 sq ins~~ 3.97 sq ins (2 1/2 dia) Are the safety valves fitted with easing gear Yes ✓ Working pressure as per Rules 220 lbs Pressure to which the safety valves are adjusted 225 lbs. Hydraulic test pressure: tubes 1500 lbs forgings and castings 660 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 22 inclusive for boilers been complied with Yes ✓
 SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. The foregoing is a correct description, ✓
 G. J. Dwyer, Manufacturer. DIRECTOR

Dates of Survey { During progress of work in shops - - - } Are the approved plans of boiler and superheater forwarded herewith 31/10/39. (If not state date of approval.)
 while building { During erection on board vessel - - - } See Machinery Report 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.)
 These Boilers have been constructed under special survey in accordance with the approved plans and the Society's Rules, and the materials & workmanship are good.

The Boilers have been satisfactorily fitted on board the vessel and tested under steam under working conditions.

See also Machinery Report.

Survey Fee ... £ See Machinery Report
 Travelling Expenses (if any) £ : : When applied for, 19
 When received, 19

A. Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 26 AUG 1941

Committee's Minute

Assigned See Nav. No. 78 99657



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