

REPORT ON BOILERS.

No. 101931

28 DEC 1943

Received at London Office

Date of writing Report 6-12-1943 When handed in at Local Office 6-12-43 19 Port of NEWCASTLE-ON-TYNE.

No. in Reg. Book. Survey held at Newcastle on Tyne Date, First Survey 12-6-42 Last Survey 30-11-1943
on the "EMPIRE MAC CABE" (Number of Visits 79) Gross 9249 Tons Net 4993Built at Newcastle By whom built Swan, Hunter & Wigham Richardson & Co. Yard No. 1726 When built 1943-
Engines made at ditto By whom made ditto Engine No. 1724 When made "
Boilers made at ditto By whom made ditto Boiler No. 1726 When made "
Nominal Horse Power 235. Owners Ministry of War Transport Port belonging to NEWCASTLE-ON-TYNE.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland Ltd. (Letter for Record S.)
Total Heating Surface of Boilers 3530 sq. ft. Is forced draught fitted Yes Coal or Oil fired oil fired.
No. and Description of Boilers Two S.E. Working Pressure 150 lb.
Tested by hydraulic pressure to 275 lb. Date of test 10-5-43 No. of Certificate N°1042. 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 2 1/4" dia. Cockburn in Dup. H. Lift.
Area of each set of valves per boiler { per Rule 7.56 sq. in. 6.69 as fitted 7.95 Pressure to which they are adjusted 150 lb. Are they fitted with easing gear Yes
In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 2'3" Is oil fuel carried in the tank double bottom under boilers Yes
Smallest distance between shell of boiler and tank top plating 2'3" Is the bottom of the boiler insulated Yes
Largest internal dia. of boilers 12'4 3/8" Length 11'0" Shell plates: Material Steel Tensile strength 30 & 34 tons
Thickness 13/16" Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR overlap inter. nil.
long. seams T.R. Dbl. butt straps Diameter of rivet holes in { circ. seams 15/16" Pitch of rivets { 3'08. long. seams 7/8" 6 3/16
Percentage of strength of circ. end seams { plate 69.59 rivets 42.24 Percentage of strength of circ. intermediate seam { plate nil rivets
Percentage of strength of longitudinal joint { plate 85.85 rivets 85.96 combined 88.91
Thickness of butt straps { outer 5/8" inner 3/4" No. and Description of Furnaces in each Boiler Two Deighton Corrugated
Material S. Tensile strength 26 & 30 tons Smallest outside diameter 3'7 1/8"
Length of plain part { top bottom Thickness of plates { crown 15/32" bottom Description of longitudinal joint Fore welded
Dimensions of stiffening rings on furnace or c.c. bottom nil
End plates in steam space: Material S. Tensile strength 26 & 30 tons Thickness 15/16" Pitch of stays 17 3/4" x 14 7/8"
How are stays secured Nuts inside & outside
Tube plates: Material { front S. back S. Tensile strength { 26 & 30 tons Thickness { 15/16" 3/4"
Mean pitch of stay tubes in nests 7 1/2" x 11 1/4" Pitch across wide water spaces 13 1/2"
Girders to combustion chamber tops: Material S. Tensile strength 28 & 32 tons Depth and thickness of girder
at centre 7 3/4" x 5/8" x two Length as per Rule 30 1/2" Distance apart 9" No. and pitch of stays
in each Two @ 9 3/8"
Combustion chamber plates: Material S.
Tensile strength 26 & 30 tons Thickness: Sides 5/8" Back 3/4" Top 5/8" Bottom 5/8"
Pitch of stays to ditto: Sides 9 3/8" x 9" Back 7 1/2" x 9" Top 9 3/8" x 9" Are stays fitted with nuts or riveted over? nutted both ends. Remaining back stays riveted inside & with nuts outside
Front plate at bottom: Material S. Tensile strength 26 to 30 tons
Thickness 15/16" Lower back plate: Material S. Tensile strength 26 to 30 tons Thickness 15/16"
Pitch of stays at wide water space 13 1/2" x 9" Are stays fitted with nuts or riveted over? with nuts
Main stays: Material S. Tensile strength 28 to 32 tons
Diameter { At body of stay, or Over threads 2 3/8" No. of threads per inch 6
Screw stays: Material S. Tensile strength 26 & 30 tons
Diameter { At turned off part, or Over threads 1 1/2" No. of threads per inch 9.

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Foundation

Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 5/8" + 1 3/4"
Over threads }
No. of threads per inch 9
Tubes: Material W. Iron. External diameter { Plain } 2 1/2" Thickness { 10 WG } No. of threads per inch 9
Pitch of tubes 3 3/4" x 3 3/4" Section of compensating ring 1 7 1/2" x 1 3/16" plus flange Manhole compensation: Size of opening in
shell plate 20" x 16" No. of rivets and diameter of rivet holes 38 of 1 1/8" dia
Outer row rivet pitch at ends 8" Depth of flange if manhole flanged 2 1/2" Steam Dome: Nil
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 Thickness of crown No. and diameter of
stays Inner radius of crown
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 Nil 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 easing gear
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

or The foregoing is a correct description,
SWAN, HUNTER, & WIGHAM LTD. Manufacturer.

Dates of Survey { During progress of work in shops - - }
while building { During erection on board vessel - - - }
Are the approved plans of boiler and superheater forwarded herewith 28/5/42
(If not state date of approval.)
Total No. of visits

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. British Character, SHWR 1698
SHWR Rpt No 100.073.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) British Respect, SHWR yard No 1724
SHWR Rpt No 101.186.

These Donkey Boilers have been constructed under special survey in accordance with the approved plans and the Society's Rules and the materials and workmanship are good.
The Boilers have been efficiently fitted on board and tested under steam with satisfactory results.
See also Machy Rpt 46.

Survey Fee ... £ See Machy Rpt 46. When applied for, 19
Travelling Expenses (if any) £ When received, 19

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

Committee's Minute FRI. 7 JAN 1944

Assigned See minute on J.B. Rpt.