

REPORT ON BOILERS.

18 SEP 1952

Received at London Office.

Date of writing Report 16th Sept. 52 • When handed in at Local Office 16th Sept. 52 • Port of M A L M Ö.

No. in Survey held at Date, First Survey 26/6 Last Survey 9/9 1952.

(Number of Visits 9) Gross Tons Net

on the

Master Built at Gothenburg By whom built Eriksbergs M.V. A.-B. Yard No. 429 When built 1952.

Engines made at By whom made Engine No. 107 When made

Boilers made at Karlskrona By whom made Marinverkstäderna, Örlogsvärvet Boiler No. 108 When made 1952

MN 451 Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Ferrostal A.G. Essen (Letter for Record)

Total Heating Surface of Boilers $2 \times 251.7 \text{ m}^2 = 5412 \text{ sq. feet}$ Is forced draught fitted Coal or Oil fired

No. and Description of Boilers 2 - Multitubular Boilers Working Pressure 12.7 kg/cm^2

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

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler

Area of each set of valves per boiler { per Rule as fitted Pressure to which they are adjusted Are they fitted with easing gear

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 Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated

Largest internal dia. of boilers 4336 mm. Length Total 3550 mm. Shell plates: Material S.M. Steel Tensile strength 46.8-49.5 kg/mm²

Thickness 32 mm. Are the shell plates welded or flanged Welded Description of riveting: circ. seams El. welded. inter.

long. seams El. welded Diameter of rivet holes in { circ. seams long. seams Pitch of rivets {

Percentage of strength of circ. end seams { plate rivets Percentage of strength of circ. intermediate seam { plate rivets

Percentage of strength of longitudinal joint { plate rivets Working pressure of shell by Rules combined

Thickness of butt straps { outer inner No. and Description of Furnaces in each Boiler 3 - Morison corrugated

Material S.M. Steel Tensile strength 44.6 - 46.0 kg/mm² Smallest outside diameter 1078 mm.

Length of plain part { top bottom Thickness of plates { crown bottom 14 mm. Description of longitudinal joint Welded.

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

End plates in steam space: Material S.M. Steel Tensile strength 43.8-44.4 kg/mm² Thickness 26 mm. Pitch of stays 480x480 mm.

How are stays secured El. welded Working pressure by Rules

Tube plates: Material { front back S.M. Steel Tensile strength { 44.5-45.9 kg/mm² 44.2-45.4 kg/mm² Thickness { 23 mm. 20 mm.

Mean pitch of stay tubes in nests 280.5 mm. Pitch across wide water spaces 337.5 mm. Working pressure { front back

Girders to combustion chamber tops: Material S.M. Steel Tensile strength 42.6 - 43.0 kg/mm² Depth and thickness of girder

at centre 200 x 26 mm. Length as per Rule 729 mm. Distance apart 220 mm. No. and pitch of stays

in each El. welded Working pressure by Rules Combustion chamber plates: Material S.M. Steel

Tensile strength 42.9 - 45.5 kg/mm² Thickness: Sides 21 mm. Back 21 mm. Top 21 mm. Bottom 21 mm.

Pitch of stays to ditto: Sides 250x225 mm. Back 235x225 mm. Top 220-Cont. el. welding Are stays fitted with nuts or riveted over shell riveted over

Working pressure by Rules Front plate at bottom: Material S.M. Steel Tensile strength 44.5-45.9 kg/mm²

Thickness 23 mm. Lower back plate: Material S.M. Steel Tensile strength 45.0-46.6 kg/mm² Thickness 23 mm.

Pitch of stays at wide water space 327.5 x 235 mm. Are stays fitted with nuts or riveted over El. welded

Working pressure Main stays: Material S.M. Steel Tensile strength 44 - 50 kg/cm²

diameter { At body of stay or Over threads No. of threads per inch Area supported by each stay

Working pressure by Rules Screw stays: Material S.M. Steel Tensile strength 41 - 47 kg/mm²

diameter { At turned off part or Over threads 40 mm. No. of threads per inch 9 Area supported by each stay

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Working pressure by Rules..... Are the stays drilled at the outer ends..... No. Margin stays: Diameter..... At turned off part.....
No. of threads per inch..... El. welded..... Area supported by each stay..... Working pressure by Rules.....
Tubes: Material..... External diameter..... Plain..... Stay..... Thickness..... No. of threads per inch.....
Pitch of tubes..... Working pressure by Rules..... Manhole compensation: Size of opening in
shell plate. 570 x 455 mm. Section of compensating ring 12177 mm² No. of rivets and diameter of rivet holes. El. welded ✓
Outer row rivet pitch at ends..... Depth of flange if manhole flanged 89.5 mm. ✓ 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..... None. 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 casing gear..... Working pressure as per
Rules..... Pressure to which the safety valves are adjusted..... Hydraulic test pressure
tubes..... forgings and castings..... and after assembly in place..... Are drain cocks
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.....

The foregoing is a correct description,
MARINVERKSTÄDERNA
ÖRLOGSVARVET
KARLSKRONA
Manufacturers of

Dates of Survey while building { During progress of work in shops - - 26/6, 8/7, 10/7, 13/6, 18/7, 24/7
During erection on board vessel - - - 25/7, 30/7, 9/9. Are the approved plans of boiler and superheater forwarded herewith.....
(If not state date of approval.)
Total No. of visits..... 9

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 donkey boilers have been built under
Special Survey in accordance with the Rules for Welded Pressure Vessels Class I and the approved plans.
The workmanship is good and the material fulfil the Rule requirements. X-ray films of the welded
seams have been examined by the undersigned and found satisfactory. Test sheets of routine tests of
welding carried out in my presence at the testing laboratory at Marinverkstäderna, Örlogsvarvet,
Karlskrona and plans showing position and number of X-ray films on which it is indicated the category
in which each film was placed by Tekniska Röntgencentralen are attached herewith. Macro tests have
been carried out at the Works of Messrs. Marinverkstäderna, Örlogsvarvet, Karlskrona with satisfactory
results.

These donkey boilers are suitable to be fitted in a classed vessel after stress relieving
calibration, fitting of tubes and testing by hydraulic pressure with satisfactory results in the
presence of the Gothenburg Surveyors. The boilers have been dispatched to Messrs. Eriksbergs Mek.
Verkstads A.-B., Gothenburg for completion.

Copy of this report has been sent to the Gothenburg Surveyors.

3/4 Survey Fee Kr. 2.170:- } When applied for, 16/9 1952.
Travelling Expenses (if any) Kr. : 289:90 } When received 19.....

A. Barring

Engineer Surveyor to Lloyd's Register of Shipping.

FRI 9 JAN 1953

Committee's Minute.....

Assigned San F.E. Melby, rph. Got 19475



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Foundation