

# REPORT ON BOILERS.

Received at London Office 30 DEC 1936

Date of writing Report 22<sup>nd</sup> Dec. 1936 When handed in at Local Office 19 Port of BREMEN

No. in Reg. Book. Survey held at WESERMÜNDE Date, First Survey 7<sup>th</sup> Aug 1936 Last Survey 8<sup>th</sup> Dec. 1936

68529 on the STEEL SC TRAWLER NORTHERN ISLES (Number of Visits 11) Tons {Gross 655 Net 243

Master Built at WESERMÜNDE By whom built DESCHIMAG, WERK: SEEBECK Yard No. 569 When built 1936

Engines made at WESERMÜNDE By whom made DESCHIMAG, WERK: SEEBECK Engine No. 1536 When made 1936

Boilers made at WESERMÜNDE By whom made DESCHIMAG, WERK: SEEBECK Boiler No. 774 When made 1936

Nominal Horse Power 167 Owners MAC LINE LTD. Port belonging to LONDON

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

Manufacturers of Steel M.M. Mannmann & Co. Werke, Akt. Heinrich Nissenstrasse (Letter for Record 5)

Total Heating Surface of Boilers 250 m<sup>2</sup> 2691 φ Is forced draught fitted no Coal or Oil fired coal fired

No. and Description of Boilers One Multitubular Main Boiler Working Pressure 228 lbs (16 kg/cm<sup>2</sup>)

Tested by hydraulic pressure to 394 lbs Date of test 16.10.36 No. of Certificate 187 Can each boiler be worked separately

Area of Firegrate in each Boiler 6.85 m<sup>2</sup> No. and Description of safety valves to each boiler 2 spring loaded Safety Valves

Area of each set of valves per boiler {per Rule 8930 cm<sup>2</sup> as fitted 2 x 5026 cm<sup>2</sup> Pressure to which they are adjusted 228 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 200 cm Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating no tank under boiler Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 4650 cm Length 3375 cm Shell plates: Material F. M. Steel Tensile strength 47-54 kg/mm<sup>2</sup>

Thickness 38 cm Are the shell plates welded or flanged flanged Description of riveting: circ. seams {end Cp. double inter. -

long. seams double butt straps Diameter of rivet holes in {circ. seams 38 cm long. seams 41 cm Pitch of rivets {109 cm 260 cm

Percentage of strength of circ. end seams {plate 60% rivets 42% Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 84% rivets 96% combined 87% Working pressure of shell by Rules 16.2 kg/cm<sup>2</sup>

Thickness of butt straps {outer 29.5 cm inner 32.5 cm No. and Description of Furnaces in each Boiler 3 Morrison furnaces 30%

Material F. M. Steel Tensile strength 41-47 kg/mm<sup>2</sup> Smallest outside diameter 1187 cm

Length of plain part {top bottom Thickness of plates {crown 18.5 cm bottom 18.5 cm Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 16.2 kg/cm<sup>2</sup>

End plates in steam space: Material F. M. Steel Tensile strength 41-47 kg/mm<sup>2</sup> Thickness 27 cm Pitch of stays 455 x 380 cm

How are stays secured nuts inside, nuts & washers outside Working pressure by Rules 16.3 kg/cm<sup>2</sup>

Tube plates: Material {front F. M. Steel back F. M. Steel Tensile strength {41-47 kg/mm<sup>2</sup> Thickness {29 cm 23 cm

Mean pitch of stay tubes in nests 330 x 220 cm Pitch across wide water spaces 370 cm Working pressure {front 16 kg/cm<sup>2</sup> back 17.8

Girders to combustion chamber tops: Material F. M. Steel Tensile strength 47-54 kg/mm<sup>2</sup> Depth and thickness of girder

at centre 235 cm 2 x 17 cm Length as per Rule 800 cm Distance apart 190 cm No. and pitch of stays

in each 3 180 cm Working pressure by Rules 17.8 kg/cm<sup>2</sup> Combustion chamber plates: Material F. M. Steel

Tensile strength 41-47 kg/mm<sup>2</sup> Thickness: Sides 16 cm Back 16 cm Top 16 cm Bottom 25 cm

Pitch of stays to ditto: Sides 180 x 190 cm Back 180 x 201 cm Top 180 x 190 cm Are stays fitted with nuts or riveted over fitted with nuts

Working pressure by Rules 17.2 kg/cm<sup>2</sup> Front plate at bottom: Material F. M. Steel Tensile strength 41-47 kg/mm<sup>2</sup>

Thickness 29 cm Lower back plate: Material F. M. Steel Tensile strength 41-47 kg/mm<sup>2</sup> Thickness 26 cm

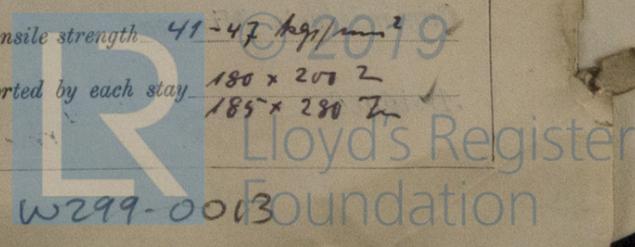
Pitch of stays at wide water space 360 x 180 cm Are stays fitted with nuts or riveted over fitted with nuts

Working Pressure 24 kg/cm<sup>2</sup> Main stays: Material F. M. Steel Tensile strength 44-50 kg/mm<sup>2</sup>

Diameter {At body of stay, 72 cm 56 cm No. of threads per inch 6 Area supported by each stay 455 x 430 cm 360 x 180 cm

Over threads 80 cm 64 cm Working pressure by Rules 16.2 kg/cm<sup>2</sup> Screw stays: Material F. M. Steel Tensile strength 41-47 kg/mm<sup>2</sup>

Diameter {At turned off part, 39 cm 45 cm No. of threads per inch 9 Area supported by each stay 180 x 201 cm 185 x 280 cm



Working pressure by Rules 16.6, 16.3 kg/cm<sup>2</sup> Are the stays drilled at the outer ends *m* Margin stays: Diameter { At turned off part, or Over threads } 48 Z 54 Z  
 No. of threads per inch 9 Area supported by each stay 220 x 220, 280 x 280 Z Working pressure by Rules 17.5 kg/cm<sup>2</sup> 16.5 kg/cm<sup>2</sup>  
 Tubes: Material *F.M. Steel* External diameter { Plain 83 Z Stay 83 Z } Thickness { 4 Z 8 Z } No. of threads per inch 9  
 Pitch of tubes 110 x 110 Z Working pressure by Rules 16 kg/cm<sup>2</sup> Manhole compensation: Size of opening in shell plate 300 x 400 Z Section of compensating ring *full plate under dome* No. of rivets and diameter of rivet holes 24. 38 Z  
 Outer row rivet pitch at ends 170 Z Depth of flange if manhole flanged *-* Steam Dome: Material *F.M. Steel*  
 Tensile strength 41-47 kg/cm<sup>2</sup> Thickness of shell 15 Z Description of longitudinal joint *lg. double riveted*  
 Diameter of rivet holes 23 Z Pitch of rivets 87 Z Percentage of strength of joint { Plate 74 % Rivets 56 % }  
 Internal diameter 800 Z Working pressure by Rules 18.6 kg/cm<sup>2</sup> Thickness of crown 19 Z No. and diameter of stays *none* Inner radius of crown 800 Z Working pressure by Rules 16.7 kg/cm<sup>2</sup>  
 How connected to shell *by flanged collar* Size of doubling plate under dome 1450 Z f x 35 Z Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 26 Z 90 Z

Type of Superheater *Smoke tube (Pfeil)* Manufacturers of

Tubes *Preussische Waggonbau A.G. of Dinslaken - Rhenish*  
 Steel forgings *-*  
 Steel castings *Königsche Hütte, Kaminwerke*

Number of elements 68 Material of tubes *F.M. Steel, namlen* Internal diameter and thickness of tubes 17 Z 3.5 Z  
 Material of headers *cast steel* Tensile strength 41-55 kg/cm<sup>2</sup> Thickness 18 Z 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 804 Z<sup>2</sup> Are the safety valves fitted with easing gear *yes* Working pressure as per Rules 16.5 kg/cm<sup>2</sup> Pressure to which the safety valves are adjusted 228 lbs Hydraulic test pressure: tubes 100 kg/cm<sup>2</sup> forgings and castings 50 kg/cm<sup>2</sup> and after assembly in place 50 kg/cm<sup>2</sup> 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*

Deutsche Schiff- und Maschinenbau Aktiengesellschaft

The foregoing is a correct description,

*per Koefo H. J. J. J.*

Manufacturer.

Dates of Survey { During progress of work in shops - - } *Aug. 7. 14. 21. 25. Sept 14. 22. Oct 16. 29.* Are the approved plans of boiler and superheater forwarded herewith *yes* (If not state date of approval.)  
 { During erection on board vessel - - } *Nov 13. 20. Dec. 8* Total No. of visits *11*

Is this Boiler a duplicate of a previous case *yes* If so, state Vessel's name and Report No. *NORTHERN PRIDE*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This Boiler and Superheater have been built under Special Survey in accordance with the appr. plans, the Secretary's letters, and in conformity with the requirements of the Rules. The materials used in the construction are made at works recognized by the Committee and tested as per Rule. Materials and workmanship are of good quality, and the boiler is eligible in my opinion to be recorded in the Loc. Reg. Book with 228 lbs of pressure.*

Marks on Boiler:

No 187  
 LLOYD'S TEST  
 392 lbs  
 WP 228 "  
 A.C. 16.10.36

Thickness of adjoining members:

Port valve 26.2 Z  
 Head " 25.8 Z  
 Supoh. " 12.2 Z

Survey Fee ... £ : : } *incl. in Rpt 4* When applied for, 10  
 Travelling Expenses (if any) £ : : } When received, 10

*A. Carstensen*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. JAN 8 1937

Assigned

*See Rm 1861*



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