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REPORT ON BOILERS

No. 1642

Received at London Office FRI. 7-JUL 1916

Writing Report 22nd June 1916. When handed in at Local Office 6th July 1916 Port of Barrow-in-Furness

in. Survey held at Barrow-in-Furness Date, First Survey 15th June 1914 Last Survey 19

on the Twin Screw Icebreaker "J.D. HAZEN" (Number of Visits) } Gross Tons } Net

Built at Montreal By whom built Messrs Canadian Vickers Ltd. When built 1916

Boilers made at Barrow-in-Furness By whom made Messrs Vickers Ltd when made 1916

Plates made at Barrow-in-Furness By whom made Messrs Vickers Ltd when made 1916

Indicated Horse Power Owners Imperial Russian Government Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY. Manufacturers of Steel Wm Beardmore & Co Ltd; D Colville & Son Ltd; Frodingham Iron & Steel Co.

Total Heating Surface of Boilers 11056 sq ft Is forced draft fitted Yes No. and Description of Four single ended multitubular

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Dates of test 19/5/16 21/5/16 24/6/16

Can each boiler be worked separately Yes Area of fire grate in each boiler 40 sq ft No. and Description of Two spring loaded

Area of each valve 12.56 sq in Pressure to which they are adjusted X

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Mean dia. of boilers 15'-7 7/16" Length 11'-6"

Material of shell plates Steel Thickness 17/16" Range of tensile strength 28/32 tons Are the shell plates welded or flanged No

Material of riveting: cir. seams D.R. Lap long. seams D.R. Double Butt Diameter of rivet holes in long. seams 1 15/32" Pitch of rivets 10"

Per centages of strength of longitudinal joint rivets 84.7% Working pressure of shell by plate 85.3%

Size of manhole in shell 20" x 16" Size of compensating rings 3'-6 1/2" x 2'-6 3/4" x 1 1/16" No. and Description of Furnaces in each 3 - corrugated

Material Steel Outside diameter 4'-3 1/2" Length of plain part top 1'-8" Thickness of plates bottom 1'-8"

Material of longitudinal joint Weld No. of strengthening rings 1 Working pressure of furnace by the rules 196 lbs Combustion chamber Steel

Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 1" Pitch of stays to ditto: Sides 8 3/4" x 7 3/8" Back 8 3/4" x 7 3/8"

Working pressure by rules 186 lbs Material of stays Steel Diameter at smallest part 4'-23 1/8"

Area supported by each stay 64.50 sq in Working pressure by rules 100 lbs End plates in steam space: Material Steel Thickness 1 1/16"

Material of stays Steel Diameter at smallest part 4'-23 1/8"

Working pressure by rules 232 lbs Material of Front plates at bottom Steel Thickness 27/32" Material of back plate Steel

Thickness 27/32" Greatest pitch of stays 13 1/4" x 8 3/4" Working pressure of plate by rules 195 lbs Diameter of tubes 2 1/2"

Material of tube plates Steel Thickness: Front 27/32" Back 11/16" Mean pitch of stays 9.66" Pitch across wide spaces 12 3/4"

Working pressures by rules 190 lbs Girders to Chamber tops: Material Steel Depth and thickness of at centre 9 1/2" x 1 1/2"

Length as per rule 32" Distance apart 8 3/4" Number and pitch of Stays in each 3 - 7 3/8"

Working pressure by rules 210 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked Yes

Material Steel Description of longitudinal joint Weld Diam. of rivet 1 15/32"

Working pressure of shell by rules 186 lbs Diameter of flue 15'-7 7/16" Material of flue plates Steel Thickness 1 1/16"

Working pressure by rules 190 lbs End plates: Thickness 1 1/16" How stayed Weld

Working pressure of end plates 190 lbs Area of safety valves to superheater None Are they fitted with easing gear Yes

FOR VICKERS LIMITED, The foregoing is a correct description, J. Houston, Manufacturer.

During progress of work in shops - Mar (1916) 1, 3, 6, 8, 10, 14, 15, 17, 20, 22, 27, 28, 30 April 4, 7, 10, 15, 18, 20, 26, 28. May 1, 3, 5, 6, 9, 12, 15, 19, 22, 24, 27, 30. June 1, 3, 6, 7. July 4. Is the approved plan of boilers forwarded herewith Yes

During erection on board vessel - None Total No. of visits 19

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c. These boilers have been constructed under special survey, & the materials & workmanship are sound & good. They have been tested by hydraulic pressure to 360 lbs per sq in. found tight & sound at that pressure. They are being dispatched to Montreal to be fitted on board the vessel there. For opinions as to class, see Machinery Report.

Survey Fee ... £ See Machy Report When applied for, 19

Travelling Expenses (if any) £ See Machy Report When received, 19

Signature John Houston Engineer, Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute FRI. 23 JUN. 1922

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