Rpt. 4.

REPORT ON MACHINERY. No. 75.

REC'D NEW YORK Dec. 13. 1916. Received at London Office THU. 28 DEC. 1916

Date of writing Report 22. Nov. 1916 When handed in at Local Office 29 November 1916 Port of CLEVELAND, OHIO.

No. in Reg. Book. Survey held at Ashtabula. Ohio. Date, First Survey 19 June 1916 Last Survey 17. Nov 1916 Number of Visits 29

on the S.S. 'BEGNA' Tons Gross 2532 Net 1803

Master J Hansen Built at Ashtabula. By whom built Gt Lakes Eng. Wks When built 1916

Engines made at Ashtabula. O. By whom made Gt. Lakes Eng. Wks. No 165. when made 1916.

Boilers made at Toledo. Ohio. By whom made The Toledo Boiler Wks. Co when made 1916

Registered Horse Power Owners Hans Hansen. Port belonging to Christiania

Nom. Horse Power as per Section 28 284 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Compound. No. of Cylinders 3. No. of Cranks 3

Dia. of Cylinders 21 - 34½ - 57 Length of Stroke 42" Revs. per minute 83. Dia. of Screw shaft as per rule 11.6 as fitted 12.25 Material of screw shaft Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned Dovetailed/Bushed If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 51"

Dia. of Tunnel shaft as per rule 10.71" as fitted None Dia. of Crank shaft journals as per rule 11.24" as fitted 11.25" Dia. of Crank pin 11¼" Size of Crank webs 21" x 8" Dia. of thrust shaft under collars 11¼" Dia. of screw 13'-6" Pitch of Screw 14'-6" No. of Blades 4 State whether moveable Yes Total surface 64.5 Sq. Ft.

No. of Feed pumps 2 Diameter of ditto Duplex 10"x6"x12" Stroke 10"x5"x12" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3½" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3. Sizes of Pumps Dup: 10"x12"x10". 10"x5"x12", 6"x4"x6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 - 4" Bore. 1 - 3" Bore. In Holds, &c. In 1, 2 - 3", In 2, 2 - 3" In 3, 2 - 3" Bore.

No. of Bilge Injections One sizes 6" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size 1 - 3" Bore

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible —

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers Steam & Winches & Ejector How are they protected In wrought iron trunkway

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Dates of examination of completion of fitting of Sea Connections 30.9.16 of Stern Tube 26.9.16 Screw shaft and Propeller 26.9.16

Screw Shaft Tunnel watertight None Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Worth Bros. Co.

Total Heating Surface of Boilers 4160 Sq. Ft. Is Forced Draft fitted Yes No. and Description of Boilers 2 Cyl. Single end

Working Pressure 175 lbs Tested by hydraulic pressure to 263 lbs Date of test 22.9.16 29.9.16 No. of Certificate 19 & 20

Can each boiler be worked separately Yes Area of fire grate in each boiler 52 Sq. Ft. No. and Description of Safety Valves to each boiler 2. Spring Area of each valve 11.0" Pressure to which they are adjusted 175 lbs Are they fitted with easing gear Yes

Smallest distance between boilers ~~or uptakes~~ and bunkers ~~or woodwork~~ 6" Mean dia. of boilers 13'-6" Length 11'-0" Material of shell plates S.

Thickness 15/32" Range of tensile strength 28/32 T. Are the shell plates welded or flanged No Descrip. of riveting: cir. seams S.R.L. long. seams DBS/TR. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 7¾" ~~Top of plates or~~ width of butt straps 17½/11½

Per centages of strength of longitudinal joint rivets 84.03 plate 85.2 Working pressure of shell by rules 180 lbs. Size of manhole in shell 15" x 11"

Size of compensating ring 33" x 33" No. and Description of Furnaces in each boiler 3. Corrugated Material S. Outside diameter 44¼"

Length of plain part top ... bottom ... Thickness of plates crown 17/32" bottom 17/32" Description of longitudinal joint Welded No. of strengthening rings —

Working pressure of furnace by the rules 175 lbs Combustion chamber plates: Material S. Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 7½" · 7½" Back 7½" · 7½" Top 8" · 7½" If stays are fitted with nuts or riveted heads Riveted Working pressure by rules 177 lbs.

Material of stays S. ~~Diameter~~ Area at smallest part 1.259 sq" Area supported by each stay 56.25 sq" Working pressure by rules 179 lbs End plates in steam space:

Material S. Thickness 11/64" Pitch of stays 16" x 16" How are stays secured DN. Working pressure by rules 180 lbs Material of stays S.

~~Diameter~~ Area at smallest part 5.41 sq" Area supported by each stay 257 sq" Working pressure by rules 219 lbs Material of Front plates at bottom S.

Thickness ¾" Material of Lower back plate S. Thickness 5/8" Greatest pitch of stays 11½" Working pressure of plate by rules 190 lbs.

Diameter of tubes 2¼" Pitch of tubes 3⅞" · 3⅝" Material of tube plates S Thickness: Front ¾" Back 5/8" Mean pitch of stays 7½"

Pitch across wide water spaces 13¼" Working pressures by rules 178 lbs Girders to Chamber tops: Material S Depth and thickness of girder at centre 8¾" x 1½" Length as per rule 31.5" Distance apart 8" Number and pitch of stays in each 3 @ 7½"

Working pressure by rules 202 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —

If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —

Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

GEN[illegible]

VERTICAL DONKEY BOILER—

Manufacturers of Steel Iron fitted.

No. Description

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of [illegible]

Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment

If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length

Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams

Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets Plates

Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays

Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint

Working pressure of furnace by rules Thickness of furnace crown plates Radius of do. Stayed by

Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— 2. Main bearing bolts, 2. bottom end bolts, one set coupling bolts, set of feed and bilge pump valves, set of piston springs, assorted bolts & iron. Wedges for Con rod top ends.

The foregoing is a correct description,

Manufacturer. Great Lakes Engineering Works

Dates of Survey while building — During progress of work in shops: 1916 June 19. 27, July 11. 24, Aug. 2, 7. 24. 30. Sep 9. 18. 26. 30. Oct 16. 31. Nov. 2. 14. 16. Boilers, June 26. July 7. 20. Aug. 2. 8. 14. 17. Sep 2. 13. 22.

During erection on board vessel:

Total No. of visits Engines 17. Boilers 12.

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " "

Dates of Examination of principal parts—Cylinders 18. 9. 16 Slides 7. 8. 16 Covers 7. 8. 16 Pistons 7. 8. 16 Rods 24. 8. 16 Connecting rods 24. 8. 16 Crank shaft 18. 9. 16 Thrust shaft 18. 9. 16 Tunnel shafts — Screw shaft 28. 9. 16 Propeller 26. 9. 16 Stern tube 26. 9. 16 Steam pipes tested 2. 11. 16 Engine and boiler seatings 18. 9. 16 Engines holding down bolts 31. 10. 16 Completion of pumping arrangements 31. 10. 16 Boilers fixed 31. 10. 16 E[illegible] Main boiler safety valves adjusted 14. 11. 16 Thickness of adjusting washers 165. WL Material of Crank shaft S. Identification Mark on Do. 1916 Material of Thrust shaft [illegible] Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts S. Identification Marks on Do. 191[illegible] Material of Steam Pipes Steel Test pressure 525 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this Vessel has been constructed under Special Survey. The materials and workmanship employed being sound and good. On completion, the machinery was examined while under steam. The results being satisfactory.

The Vessel is eligible, in our opinion, for record

+LMC. 11. 16.

The above Machinery and Boilers are duplicate of those fitted in same Builders 160 Ship S/S "SEKSTANT"

+LMC 11. 16. F.D.

Subject.

JWD. 3/1/17

W. Lane. T.T. Boon.

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee ..$ 10 : 00 :

Special .. .. ..$171 . 00.

FORGINGS Donkey Boiler Fee ~~Engs.~~ £ 79 : 40 :

~~Cleats $34.0 Outlet 12.0~~

Travelling Expenses (if any) $46 : 00 :

When applied for, Dec 9 1916

When received, 8/2/17 1917

Committee's Minute New York DEC 14 1916

Assigned +Lmc 11.16. Elec. Light

TUE. 25 MAR. 1919

TUE. 20 FEB. 1917

FRI. 25 MAY. 1917

FRI. 13 JUL. 1917

TUE. 12 MAR. 1918

TUE. 30 APR. 1918

TUE. AUG