

REPORT ON MACHINERY.

Received at London Office MON. DEC. 1

of writing Report 26th Octbr. 1914 When handed in at Local Office 19 Port of Hamburg
 in Survey held at Rostock Date, First Survey 8th Jan. 1914 Last Survey 27th October 1914
 Book 84 on the Steel S.S. "Irngard" (Number of Visits 19)
 Master O. Hauschildt Built at Rostock By whom built Hlt. Ges. Neptun Tons { Gross 3816
 Engines made at Rostock By whom made Hlt. Ges. Neptun when made 1914 Net 2304
 Boilers made at Rostock By whom made Hlt. Ges. Neptun when made 1914 When built 1914
 Registered Horse Power 452 Owners Hamburg Bremer Afrika Linie Port belonging to Bremen
 Nom. Horse Power as per Section 28 452 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25 1/16, 41, 68 7/8 Length of Stroke 47 1/2 Revs. per minute 70 Dia. of Screw shaft 14 1/4 as per rule 14 1/4 Material of Steel
 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
 the propeller boss yes If the liner is in more than one length are the joints burned — 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
 shafts are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4 1/2
 Dia. of Tunnel shaft 13 7/16 as per rule 13.09 Dia. of Crank shaft journals 13 7/16 as per rule 13.75 Dia. of Crank pin 13 1/16 Size of Crank webs 8 1/4 x 1 1/2 Dia. of thrust shaft under
 flanges 13 7/16 Dia. of screw 17 1/16 Pitch of Screw 17 1/2 No. of Blades 4 State whether moveable yes Total surface 83.609 sq. ft.
 No. of Feed pumps 2 Diameter of ditto 4 1/16 Stroke 2 3/8 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 2 3/8 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 5 Sizes of Pumps See Specification No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 4 off 3/16, 1 off 1/4, 1 off 3/16 from Well, 1 off 3/16 from Forward Holds, &c. 10 off 3/16, 1 off 1/4 from Forepeak, 3 off 3/16, 1 off
3/16 and 1 off 1/4 from Ballast tanks.
 No. of Bilge Injections 1 sizes 7" Connected to condenser, on to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes - 4"
 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 none
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks
 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
 That pipes are carried through the bunkers Forehold suction How are they protected by wood boxes
 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 25.7.14 of Stern Tube 1.8.14 Screw shaft and Propeller 25.7.14
 the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Cylinder platform

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel Schulz Knauth, A.G., Hückingen
 Total Heating Surface of Boilers 6393 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers 3 Single ended multitubular
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 25.6.14 No. of Certificate 255, 256 & 257
 Can each boiler be worked separately yes Area of fire grate in each boiler 50 sq. ft. No. and Description of Safety Valves to
 each boiler 2 Spring loaded Area of each valve 9.84 sq. in. Pressure to which they are adjusted 200 lbs. Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 26" Mean dia. of boilers 13 9/16 Length 12 0" Material of shell plates Steel
 Thickness 1.32 Range of tensile strength 28-32 Tons Are the shell plates welded or flanged — Descrip. of riveting: cir. seams lap dbl. riv.
 Long. seams dbl. riv. and via Diameter of rivet holes in long. seams 1.34 Pitch of rivets 13.45 Lap of plates or width of butt straps 27.25 x 1.25
 Percentages of strength of longitudinal joint 104.9% Working pressure of shell by rules 209.75 lbs. Size of manhole in shell 14.8 x 15.7
 Size of compensating ring 27.6 x 3.15 x 10.3 No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 39.4
 Length of plain part 5.11 Thickness of plates 1.65 Description of longitudinal joint welded No. of strengthening rings none
 Working pressure of furnace by the rules 256 lbs. Combustion chamber plates: Material Steel Thickness: Sides 63 Back 69 Top 63 Bottom 95
 Pitch of stays to ditto: Sides 7.5 x 7.8 Back 7.5 x 7.5 Top 7.5 x 7.5 If stays are fitted with nuts or riveted heads nuts & rivets Working pressure by rules 215 lbs.
 Material of stays Steel Diameter at smallest part 1.38 Area supported by each stay 58.5 sq. in. Working pressure by rules 241 lbs. End plates in steam space:
 Material Steel Thickness 1.03 Pitch of stays 14.9 x 18.1 How are stays secured H. rivets Working pressure by rules 217 lbs. Material of stays Steel
 Diameter at smallest part 2.68 Area supported by each stay 270 sq. in. Working pressure by rules 218 lbs. Material of Front plates at bottom Steel
 Thickness 1 Material of Lower back plate Steel Thickness .95 Greatest pitch of stays 21.5 Working pressure of plate by rules 214 lbs.
 Diameter of tubes 3 Pitch of tubes 4.25 Material of tube plates Steel Thickness: Front 1 Back .945 Mean pitch of stays 8.5
 Pitch across wide water spaces 14.1 Working pressures by rules 212.25 lbs. Girders to Chamber tops: Material Steel Depth and
 Thickness of girder at centre 8.65 x 1.41 Length as per rule 30.7 Distance apart 7.5 Number and pitch of stays in each 3 - 7.5
 Working pressure by rules 221 lbs. Superheater or Steam chest; how connected to boiler — 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
— Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 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 —

ACROSS THE MARGIN.

OF THE

W45-0125

VERTICAL DONKEY BOILER—

Manufacturers of Steel *No Donkey Boiler 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 Safety _____

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:—

1 Propellershaft, 1 bronze propeller blade, 1/3 crankshaft, 2 1/2 bolts with nuts for main bearings, 2 bolts with nuts for bottom end and 4 bolts with nuts for top end & 4 1/2 top end braces 1 slide rod for all cylinders, 3 bolts with nuts for main bearings, 2 bolts with nuts for bottom end and 4 bolts with nuts for top end & 6 coupling bolts for crankshaft coupling, 6 bolts for tunnel shafts, 1 set of studs with nuts for propeller blades, 1 eccentric strap compl., 1 eccentric sheave compl., 1 piston rod for air pump, 1 set of valve for air pump, 1 set of piston packing rings for each cylinder, 2 pump links one for each side, 1 set of valves for feed pumps, 2 springs for safety valves for boilers, 1 spring for each escape valve for cylinders & feed pumps, 50 condenser tubes with 100 ferrules, 1 1/2 set of fire bars, large number of bolts, nuts, rivets, bar and plate iron assorted.

Aktion-Gesellschaft "Neptun"
Schiffwerft & Maschinenfabrik
 Manufacturer.

Dates of Survey while building

During progress of work in shops	8/1, 3/2, 25/2, 3/3, 26/3, 9/4, 22/4, 15/5, 26/5, + 11/6 1914
During erection on board vessel	25/6, 4/7, 18/7, 25/7, 1/8, 1/9, 23/9, 16/10 + 24/10 1914
Total No. of visits	19

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 26/5 Slides 18/7 Covers 4/7 Pistons 25/7 Rods 15/5

Connecting rods 22/4 Crank shaft 28/4 Thrust shaft 26/2 Tunnel shafts 3/2 Screw shaft 11/6 Propeller 11/6

Stern tube 11/6 Steam pipes tested 1/9 Engine and boiler seatings 23/9 Engines holding down bolts 23/9

Completion of pumping arrangements 16/10 Boilers fixed 23/9 Engines tried under steam 24/10

Main boiler safety valves adjusted 24/10 Thickness of adjusting washers Fore. 1/2" aft 9/16, 1 1/2", 2 1/4", 3 1/4", 4 1/2", 5 1/2", 6 1/2", 7 1/2", 8 1/2", 9 1/2", 10 1/2", 11 1/2", 12 1/2", 13 1/2", 14 1/2", 15 1/2", 16 1/2", 17 1/2", 18 1/2", 19 1/2", 20 1/2", 21 1/2", 22 1/2", 23 1/2", 24 1/2", 25 1/2", 26 1/2", 27 1/2", 28 1/2", 29 1/2", 30 1/2", 31 1/2", 32 1/2", 33 1/2", 34 1/2", 35 1/2", 36 1/2", 37 1/2", 38 1/2", 39 1/2", 40 1/2", 41 1/2", 42 1/2", 43 1/2", 44 1/2", 45 1/2", 46 1/2", 47 1/2", 48 1/2", 49 1/2", 50 1/2"

Material of Crank shaft Steel Identification Mark on Do. 3539 3604 3590 2605 3665/69 P.H.

Material of Tunnel shafts Steel Identification Marks on Do. 3634 3635 3636 3637 3638 3639 3640 3641 3642 3643 3644 3645 3646 3647 3648 3649 3650 3651 3652 3653 3654 3655 3656 3657 3658 3659 3660 3661 3662 3663 3664 3665 3666 3667 3668 3669 3670 3671 3672 3673 3674 3675 3676 3677 3678 3679 3680 3681 3682 3683 3684 3685 3686 3687 3688 3689 3690 3691 3692 3693 3694 3695 3696 3697 3698 3699 3700 3701 3702 3703 3704 3705 3706 3707 3708 3709 3710 3711 3712 3713 3714 3715 3716 3717 3718 3719 3720 3721 3722 3723 3724 3725 3726 3727 3728 3729 3730 3731 3732 3733 3734 3735 3736 3737 3738 3739 3740 3741 3742 3743 3744 3745 3746 3747 3748 3749 3750 3751 3752 3753 3754 3755 3756 3757 3758 3759 3760 3761 3762 3763 3764 3765 3766 3767 3768 3769 3770 3771 3772 3773 3774 3775 3776 3777 3778 3779 3780 3781 3782 3783 3784 3785 3786 3787 3788 3789 3790 3791 3792 3793 3794 3795 3796 3797 3798 3799 3800 3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814 3815 3816 3817 3818 3819 3820 3821 3822 3823 3824 3825 3826 3827 3828 3829 3830 3831 3832 3833 3834 3835 3836 3837 3838 3839 3840 3841 3842 3843 3844 3845 3846 3847 3848 3849 3850 3851 3852 3853 3854 3855 3856 3857 3858 3859 3860 3861 3862 3863 3864 3865 3866 3867 3868 3869 3870 3871 3872 3873 3874 3875 3876 3877 3878 3879 3880 3881 3882 3883 3884 3885 3886 3887 3888 3889 3890 3891 3892 3893 3894 3895 3896 3897 3898 3899 3900 3901 3902 3903 3904 3905 3906 3907 3908 3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 3997 3998 3999 4000

Material of Steam Pipes Steel Test pressure 640 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. *Specification of Auxiliary Pumps.*

a) 1 Simplex double acting 180 mm diam. by 450 mm stroke for Feed purposes

b) 1 Duplex " " 220 " " " 200 " " Ballant & Bilge

c) 1 " " 180 " " " 200 " " General Service

d) 1 " " 70 " " " 100 " " Freshwater "

e) 1 injector to supply 12 1/2 Tons of water per hour to the boilers.

Material and Workmanship of these Engines and Boilers, which have been constructed under Special Survey is of very good description, the outfit is very ample. The results of tests of the Steel Boiler material, signed by the testing officers, are in my hands, the certificates of Forgings of Shafting and other engine parts will be found attached. The boilers are fitted with an Steam Superheating arrangement which I tested at the builders works with 600 lbs. hydraulic pressure, as well as all pipes carrying superheated steam. I attended to a satisfactory trial trip from Rosock to Kiel, when the machinery gave full satisfaction. I beg to recommend that the Machinery be classed and that **LMC 10** be recorded in the Society's Register Book and that a Certificate to this effect be issued.

The amount of Entry Fee .. M 63 : When applied for, FRI JAN. 11 1924 TUES. 10 FEB 1925

Special .. M 874 : 22.10.19 FRI NOV. 16 1923 TUES. 17 FEB 1925

Donkey Boiler Fee \$: When received, FRI NOV. 16 1923 TUES. 9 SEP 1924

Travelling Expenses (if any) M 378 : TUE FEB. 10 1925 TUE SEP. 27 1925

Committee's Minute FRI JAN 9 - 1926 FRI JUN 16 1922 FRI 11 APR 1924

Assigned TUES. OCT 1925 FRI APR. 16 1920 FRI NOV. 3 1922

TUE MAR. 6 1923 TUE SEP. 4 1923 TUES. 6 JAN 1925

FRI. 22 MAY 1925 FRI NOV. 26 1920 TUE FEB. 6 1923

Certificate (if required) to be written on or below the space for Committee's Minute

pt. 13.

RE

part of

No. in on

g. Book

84

By

ners Ho

rd No.

DESCRIPTION

of

Capacity of D

Where is Dym

Position of Ma

Positions of au

with

if fuses are

circuits

If vessel is wi

Are the fuses

Are all fuses

are permi

Are all switch

Total number

A Long H

B Alt hid

D Force

E Char

2 (Ma

inclu

E 12

If arc lights,

Where are th

DESCRIPTION

Main cable ca

Branch cables

Branch cables

Leads to lamp

Cargo light cab

DESCRIPTION

Keel & Br

boards

circuits &

Joints in cable

uits &

bases

Are all the join

positions

Are there any

How are the d

ed mois

