

# REPORT ON MACHINERY.

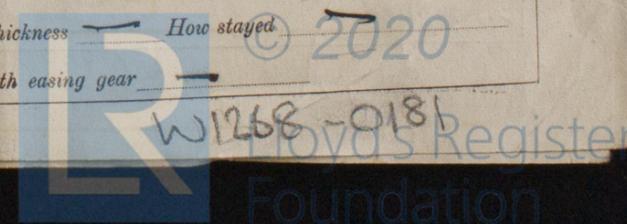
No. 13501  
MON. JUL. 21. 1913

Received at London Office

Date of writing Report 11<sup>th</sup> July 1913 When handed in at Local Office 19 Port of Hamburg  
 No. in Survey held at Kiel Date, First Survey 21<sup>st</sup> November 1912 Last Survey 10<sup>th</sup> July 1913  
 Reg. Book. "Kiowa" (Number of Visits 27)  
 on the Steel S.S. Master H. Riecke Built at Kiel By whom built Howaldtwerke When built 1913  
 Engines made at Kiel By whom made Howaldtwerke when made 1913  
 Boilers made at Kiel By whom made Howaldtwerke when made 1913  
 Registered Horse Power 320 Owners Deutsche-Amerik. Petroleum Ges. Port belonging to Hamburg  
 Nom. Horse Power as per Section 28 320 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Quadr. expansion No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 19 1/2, 28, 41, 59" Length of Stroke 41 3/8" Revs. per minute 80 Dia. of Screw shaft as per rule 12 5/16" Material of Steel  
 as fitted 13 7/8" screw shaft  
 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 no 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 no If two  
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 49 5/8"  
 Dia. of Tunnel shaft as per rule 10 3/8" Dia. of Crank shaft journals as per rule 11 5/16" Dia. of Crank pin 11 13/16" Size of Crank webs 14 1/16" Dia. of thrust shaft under  
 collars 11 5/8" Dia. of screw 15 5/8" Pitch of Screw 15 7/24" No. of Blades 4 State whether moveable yes Total surface 77.5 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 23 1/2" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 6 Diameter of ditto 4" Stroke 23 1/2" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 6 Sizes of Pumps See specifications No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 off 3 1/2", 1 off 3" from bilge In Holds, &c. 14 off 8" from cargo tanks, 10 off 6" from  
 Summer tanks, 2 off 5" from deep tank, 4 off 5" from boiler room, 1 off 1" from after peak, 1 off 5" from forepeak  
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"  
 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 no  
 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  
 What pipes are carried through the bunkers none How are they protected no  
 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 18.6.13 of Stern Tube 26.13 Screw shaft and Propeller 9.6.13  
 Is the Screw Shaft Tunnel watertight no funnel Is it fitted with a watertight door no worked from no

BOILERS, &c.—(Letter for record S) Manufacturers of Steel The Glasgow Iron & Steel Co. Ltd.  
 Total Heating Surface of Boilers 45722 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers 2 Single ended multi tubular  
 Working Pressure 213 lbs Tested by hydraulic pressure to 426 lbs. Date of test 15/5/13 No. of Certificate 208, 209 & 210  
 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 2 Requisite Pressure to which they are adjusted 213 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 16" Mean dia. of boilers 14 1/4" Length 64 ft Material of shell plates Steel  
 Thickness 1 3/4" Range of tensile strength 38-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams lap & riv.  
 long. seams lap & riv. quad. riv. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 18.43" Lap of plates or width of butt straps 27.86"  
 Per centages of strength of longitudinal joint 119.8% Working pressure of shell by rules 227.6 lbs. Size of manhole in shell 11.8 x 15.75"  
 plate 22.5% Size of compensating ring 26 x 30 x 1 3/4" No. and Description of Furnaces in each boiler 3 horizontal Material Steel Outside diameter 43.3"  
 Length of plain part 6" Thickness of plates 1.68" Description of longitudinal joint welded No. of strengthening rings none  
 Working pressure of furnace by the rules 261.4 lbs Combustion chamber plates: Material Steel Thickness: Sides .68" Back .68" Top .68" Bottom .94"  
 Pitch of stays to ditto: Sides 7.87 x 7.5" Back 7.87 x 7.5" Top 7.87 x 7.5" If stays are fitted with nuts or riveted heads not riveted Working pressure by rules 292.9 lbs  
 Material of stays Steel Diameter at smallest part 1.45" Area supported by each stay 59 sq. ins. Working pressure by rules 266.4 lbs End plates in steam space:  
 Material Steel Thickness 1.14" Pitch of stays 15 x 16.5" How are stays secured dbl. nuts & wash. Working pressure by rules 297.4 lbs Material of stays Steel  
 Diameter at smallest part 3" Area supported by each stay 28.89 sq. ins. Working pressure by rules 293.5 lbs Material of Front plates at bottom Steel  
 Thickness 1.03" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 19.69" Working pressure of plate by rules 296.6 lbs  
 Diameter of tubes 3.9" Pitch of tubes 3.75" Material of tube plates Steel Thickness: Front 1.03" Back .91" Mean pitch of stays 15"  
 Pitch across wide water spaces 13.8" Working pressures by rules 215 lbs. Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8.6 x 1.5" Length as per rule 31.5" Distance apart 7.5" Number and pitch of stays in each 3 - 7.5"  
 Working pressure by rules 213 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked  
 separately no Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet  
 holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no  
 If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no  
 Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no



**VERTICAL DONKEY BOILER—**

Manufacturers of Steel

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 \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— 1 set of studs & nuts for blades, 1 slide rod, 1 set of piston rings seal for H.P., S.P., & P.H. & L.P. cylinders, 2 pump links one for each side, 1 air pump bucket, rod & piston, 1 pair of bottom end brasses, 2 set of top end brasses, 2 main bearing bolts, 2 bottom end and 2 top end bolts with nuts, 2 set of coupling bolts one of each side, 2 set of jacking bolts for each piston, 1 set of valves for air pump, 1/2 set of valves & seats for feed & bilge pump, 3 springs for main boiler safety valves, several springs for escape valves of cylinders & feed pump, 1/2 set of pistons, 25 condenser tubes, with 50 screw glands, 25 tubes for main boiler, for centrifugal pump, 1 eccentric sheave & strap, 1 piston rod, 1 crosshead, 1 connecting rod, 1 slide valve with rod, 2 bolts for main bearings, a large number of bolts, studs, nuts, rivets, plates & bar iron.

The foregoing is a correct description, **HOWALDTSWERKE** Manufacturer.

Dates of Survey while building	During progress of work in shops - -	2/11, 5/12, 18/12, 30/12, 1912, 4/1, 11/1, 14/1, 22/1, 28/1, 1/2, 13/2, 14/2, 18/2, 1/3, 25/3, 7/5, 10/5, 15/5, 23/5, 26/5, 9/6, 1913
	During erection on board vessel - -	18/6, 20/6, 23/6, 4/7, 9/7 & 10/7 1913
Total No. of visits		27.

Is the approved plan of main boiler forwarded herewith  *Yes*  *No*

Is the approved plan of donkey boiler forwarded herewith  *Yes*  *No*

Dates of Examination of principal parts—Cylinders 2/11 12 Slides 4/1 13 Covers 14/2 13 Pistons 14/2 13 Rods 28/2 13

Connecting rods 28/4 13 Crank shaft 31/3 13 Thrust shaft 28/2 12 Tunnel shafts 19/10 12 Screw shaft 9/8 12 Propeller 2/6

Stern tube 9/6 13 Steam pipes tested 10/7 13 Engine and boiler seatings 4/7 Engines holding down bolts 4/7

Completion of pumping arrangements 10/7 13 Boilers fixed 4/7 Engines tried under steam 9/7 13

Main boiler safety valves adjusted 9/7. Thickness of adjusting washers Forew. 1 1/4, aft 7/8, Forew. 1 1/2, aft 1 1/8, Donkey boiler 2 3/4, 3 1/4

Material of Crank shaft *Steel* Identification Mark on Do. 282, 285, 287, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

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

A/1	Simplex double acting	Weirs 6 1/2" diam.	by 18 3/4" Stroke	for Feed purposes
B/1	duplex	"	"	"
C/1	"	4"	"	Geckwa & general service
D/1	"	3 1/2"	"	Donkey Boiler
E/2	"	3 1/2"	"	Oil Fuel arrangements
F/1	"	5 3/4"	"	Forew. Geckwash
G/1	"	8 1/2"	"	Ballast & Bilge service
H/1	"	8 1/2"	"	Forew. Deep tank & Bilge
I/2	"	11"	"	Oil cargo & Ballast service

Material and workmanship of these Engines & Boilers are of very best description, the outfit ample. The tests of the Steel Boiler material, signed by the testing Surveyors, are in my hands. The Forging certificates of shapping will be found attached. I attended to a satisfactory trial along side the Quay on the July 13, when the machinery gave full satisfaction. The Boilers and machinery of this Vessel having been constructed under Special Survey in accordance with the Society's Rules, I beg to recommend that they be classed fitted for Liquid Fuel 7.13 LMC 7.13 be entered in the R. P. that

The amount of Entry Fee	M	: 65 :	When applied for,	15.7.1913
Special	M	: 720 :	When received,	31.7.1913
Donkey Boiler Fee	M	: 45 :		
Travelling Expenses (if any)	M	: 2.10 :		
Committee's Minute	M	: 120 :		

It is submitted that this vessel is eligible for THE RECORD + LMC 7.13. J. Köhler  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
 Fitted for oil fuel 7.13, FP above 150°F.  
 22.1913

Assigned June 7. 13 MACHINERY CERTIFICATE WRITTEN.  
 Fitted for oil fuel 7.13 FP above 150°F

Write "Bridge Sheer Strake" and "Upper Deck Sheer Strake" opposite the corresponding letter.  
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