

Report of Survey for Repairs, &c., of Engines and Boilers.

(Received at London Office)

JUN - 7 1937

Date of writing Report 27th April 1937. When handed in at Local Office

19

Port of PORT PIRIE (South Australia)

No. in Reg. Book. Survey held at Port Pirie S.A.

Date, First Survey 3rd Jan 1937. Last Survey 27th April 1937

(No. of Visits 118.)

78148 on the Machinery of the Wood, Iron or Steel S.S. "KINGSWOOD"

Master

YEAR. MONTH.

Tonnage { Gross 5038
Net 3104

Vessel built at Newcastle

By whom W. H. M. S. B. C. (1924) Ltd When 1924 5

Registered Horse Power 520

Engines made at Newcastle

By whom H. E. M. S. B. C. Ltd When 1929 5

No. of Main Boilers 2

Boilers, when made (Main) Newcastle

(Donkey) Newcastle

No. of Donkey Boilers 1

Owners Joseph Constantine S.S. Line Ltd. Port Middlesbrough

Voyage U.K. (in tow)

Steam Pressure in Main Boilers 200 lbs.

If Surveyed Afloat or in Dry Dock Afloat

(State name of Dock.)

in Donkey Boilers

Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).

CHARACTER, for Special Survey, Date of last Survey and of Periodical Surveys.	Years Assigned or expired.	Machinery and Boiler Surveys (including date of N.B., if any).
* 100A1. Shl 9.36 10-35 S.S. Hure No 1-32 Off 9-36		* L.M.C. 5-32 B.S. 8-35 Tail shaft secn 9-36.

Last Survey No. Port

Particulars of Examination and Repairs (if any) Damage by Explosion

(Periodical Surveys, when held, must be reported in detail and serially in the terms of the Rules. State clearly the cause of Repairs, if any, and, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on account of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and besides being detailed in the body of the report, should be briefly summarised at the end of the report. State also the dates and initials of any letters respecting this case. S. 12/1/37, 11/2/37, 17/2/37, 13/3/37, Telegrams 4, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 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)

In damage cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose, and why they were declined. Copy attached to Hull Rpt. Also whether any damage report was made, and, if so, by whom?

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time?

Do. " Donkey " " "

If this was not done, state for what reasons?

And what parts of the Boilers could not be thus thoroughly examined?

Also what special means, in the absence of internal examination, were adopted by the Surveyor to assure himself of the thorough efficiency of those parts of each Boiler?

Did the Surveyor examine the Safety Valves of the Main Boiler?

To what pressure were they afterwards adjusted under steam?

Did the Surveyor examine the Safety Valves of Donkey Boiler?

To what pressure were they afterwards adjusted under steam?

Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers?

, and of the Donkey Boiler?

Did the Surveyor examine the drain plugs of the Main Boilers?

, and of the Donkey Boiler?

Did the Surveyor examine all the mountings of the Main Boilers?

, and of the Donkey Boiler?

Has screw shaft now been drawn and examined?

Is it fitted with continuous liner?

or two liners?

or is it without liners?

Has shaft now been changed?

If so, state reasons

Is the shaft now fitted new?

Has it a continuous liner?

or two liners?

or is it without liners?

State the distance between lignum vitae of stern bush and top of after bearing of screw shaft?

If the Survey is not complete state what arrangements have been made for its completion and what remains to be done?

Concurrently with the survey on Hull, an examination made of the Vessel's Machinery for damage by explosion of Auxiliary Boilers:-

From Log Books it would appear that the Vessel was at anchorage, off Port Pirie S.A., with main & auxiliary boilers under banked fires;

that on 3rd January last, when raising steam in the auxiliary boiler preparatory to moving to a berth on the following day, about 9 AM a terrific explosion occurred in the auxiliary boiler, which was projected through all forward bulkheads & lodged partly into the fore peak tank & partly through the starboard bow plating.

On examination found:- The auxiliary boiler in the position described above. On removal of the wreckage in way, the boiler was lowered into the forward hold & an internal & external examination made

P.T.O.

General Observations, Opinion, and Recommendation:-

(State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, &c.: thus, for example, B.S. 9.00, B.&M.S. 9.00, or L.M.C. 9.00, 14.00, &c.)

The Propelling Machinery of this Vessel is now out of commission. Temporary donkey boilers have been installed for auxiliary purposes during the voyage in tow, to a U.K. port. It is recommended that the records of L.M.C. remain as at present, subject to permanent repairs being effected on arrival at a U.K. port

Survey Fee (per Section 25) ... { PORT PIRIE £ 77 : 0 : 0 } Fees applied for
ADELAIDE 42 0 0 19
SYDNEY £ 73 : 0 : 0
Special Damage or Repair Fee (if any) (per Section 25.)
Travelling Expenses (if chargeable) ... { PORT PIRIE } Charged on
ADELAIDE Hull Rpt.
SYDNEY

Received by me, *R. H. Cowan*
Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

FRI 25 JUN 1937

Assigned

Signed

W249-0128

Lloyd's Register Foundation

The shell & end plates were found intact, but indented where the boiler had struck the bulkheads, etc. The front tube plate & back end plate were found badly "bulged", the back tube plates had collapsed & combustion chamber tops were depressed. All the tubes (plain tubes & stay tubes) were out, about three dozen were found in the bottom of the boiler, the others were ejected or blown out of the boiler & strewn throughout the engine room, boiler room & forward holds. A few of the stay tubes had parted near the combustion chamber ends & there was evidence that several of the stay tubes had been fitted with "steppers", all the others had their threads intact, both at the stay ends & at the tube plates. The two corrugated furnaces appeared to be undamaged. All mountings were broken off. Furnace fronts, fire bars, etc., blown out, uptake & funnel wrecked.

The two main boilers were blown backwards off their forward stools & carried against the main engines. The furnace fronts superheaters, valves & fittings - more or less damaged. Boiler mountings & steam pipes broken. The whole of the fittings in the boiler room, more or less damaged or wrecked - smokeboxes, uptakes, casings, gratings, ladders & fittings, stokehold plates & bearers, pumping connections, valves & fittings, W.T. doors, ash hoist & ventilators, etc.

The main engines found badly damaged, all cylinders broken at their attachment to columns, all back columns broken at their feet, the front columns & all motion work of main engines bent, the H.P. slipper broken, the spare L.P. piston ring broken, the water ends of condensers broken, the supporting brackets for condenser broken, the circulating water pipes to & from the main condensers broken, the centrifugal circulating water pump broken, the main engine air pump, on L.P. column broken, the air vessel on bilge pump broken, the filter tank distorted, the lower half of exhaust turbine ^{casing} broken, its primary shaft from flexible coupling ^{bent} broken, the cover of flexible coupling broken, the two independent feed pumps broken. The forced draught fan casing & engine found crushed between the starboard boiler & the bunker casing & could not be examined but appears to be completely wrecked. Steam pipes in engine room, valves & fittings, pumping connections etc broken or bent. All engine room auxiliaries, fittings & appliances more or less damaged by steam, moisture or dirt. The electric light installation throughout the engine & boiler spaces damaged or shortcircuited.

At the request of Owners, a specification, with conditions of contract, was drawn up, both for permanent repairs & for temporary repairs to enable the vessel to be towed

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THE MARGIN.

S.S. KINGSWOOD

to a port of repair. Tenders were invited from all likely Contractors in Australia & particulars cabled to Owners.

As advised in Sect^{rs} cablegram 16/2/37 & letter of 17/2/37 Owners decided on temporary repairs to enable the vessel to be towed to a port in the U.K. & arrangements were made accordingly.

As recommended, the following Temporary repairs have now been carried out :-

The only suitable donkey obtainable in Adelaide - a marine-type, horizontal, with single furnace & 100 lbs working pressure - was procured & installed in the vessel. It was tested satisfactorily on auxiliaries but with the long leads of steam piping & with the steering gear in operation, there was little or no reserve for dynamo or pumps & as time permitted, it was decided to install another small donkey boiler to work in conjunction with it (when necessary), thus ensuring a sufficient supply of steam for all reasonable contingencies. The only other suitable one obtainable was a vertical donkey boiler - 90 lbs working pressure. Both boilers were supplied with Government Certificates for their respective pressures. They were examined externally & internally, their dimensions & scantlings checked for the pressures intended, afterwards examined under steam & their safety valves adjusted; the stop valves on the 90 lb pressure boiler were made non-return valves.

The dynamo & pumps were overhauled & tested, temporary electric light wiring fitted to engine room & alongside the donkey boilers, which were installed at the after end of Uo2 hold. Steering gear overhauled, control rods to steering engine repaired, & tested. Windlass examined & tested. All broken pumping connections at the forward end of boiler room, temporarily repaired & connected to a valve box fitted in way of the auxiliary boiler recess. Pumps tested on tanks & bilges. Independent feed pumps fitted to each boiler. Feed tank installed alongside donkey boilers. Connections fitted from general service pump in engine room to this tank & also to the boiler feed line. Steam pipes & fittings efficiently supported.

On completion of the above temporary repairs, the installation was examined & tested, when all appeared sound and efficient for the voyage, in tow, to a United Kingdom port, where permanent repairs will require to be effected. (At the request of Towing Contractors & instructions from Owners the four blades of the C.I. propeller were cut off as close to the boss, as possible).