

and a List of

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 98606

27/6/40

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report

When handed in at Local Office

20/6/40 Port of

No. in Survey held at
Reg. Book.

Newcastle on Tyne

Date, First Survey 28/4/39 Last Survey 15/6/1940

Number of Visits 152.

Single
Twin
Triple
Quadruple

Screw vessel

"PORT NAPIER"

Tons Gross 9847
Net 5906

It at Newcastle

By whom built Swan, Hunter & Wigham Richardson Ltd No. 1569 When built 1940-

Lines made at Newcastle

By whom made -ditto

Engine No. 1624 When made 1940

Boilers made at Annan

By whom made Cochran & Co (Annan) Ltd

Boiler No. 14443 When made 1939-12

Horse Power 0,700

Owners Port Line Ltd

Port belonging to London

Horse Power as per Rule 2152 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Service for which vessel is intended Ocean going

ENGINES, &c. Type of Engines Opposed Piston airless injn 2 or 4 stroke cycle 2; Single or double acting Single

Mean pressure in cylinders 640 lb/45 kg/cm² Diameter of cylinders 670 M.M. Length of stroke 1340 M.M. No. of cylinders 10 No. of cranks 3 throw

Indicated Pressure 87 lb. BETWEEN CENTRES OF SIDE RODS 1300 M.M. Is there a bearing between each crank Yes, but each

of bearings, adjacent to the Crank, measured from inner edge to inner edge of side rods 1030 M.M. Means of ignition Compression Kind of fuel used Heavy oil fuel.

Revolutions per minute 113 Flywheel dia. 8' 2" Weight 1.88 tons at 1500 R.P.M. Heat of Compression Temperature

Kind of fuel used Heavy oil fuel. dia. of journals as fitted 520. Crank pin dia. 484. Crank webs 15" Mid. length breadth 730 Thickness parallel to axis 290

Intermediate Shafts, diameter as fitted 15 1/8" Thrust Shaft, diameter at collars as fitted 520.

Shaft, diameter as per Rule 16.516 Is shaft fitted with a continuous liner Yes

Shaft, diameter as fitted 17 3/16" Is the after end of the liner made watertight in the

Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner In one piece.

Liners, thickness in way of bushes as per Rule 26/32 Thickness between bushes as fitted 25/32

Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner In one piece.

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 space.

Liners are fitted, is the shaft lapped or protected between the liners. Is an approved Oil Gland or other appliance fitted at the after end of the tube

No If so, state type Length of Bearing in Stern Bush next to and supporting propeller 6' 8"

Propeller, dia. 17' 0" Pitch 15' 9" No. of blades 4 Material M. Buge whether Moveable No Total Developed Surface 98 sq. feet

Kind of reversing Engines Hand lever + compressed air Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes Means of lubrication

Thickness of cylinder liners 25 mm. Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

ducting material Lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine. Led up funnel.

Water Pumps, No. Two for distilled water cooling Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes, on 2nd floor in Aux

Pumps worked from the Main Engines, No. None Diameter — Stroke — Can one be overhauled while the other is at work —

connected to the Main Bilge Line No. and Size One Bilge Pump (150 tons/hr.) One Ball Pump (280 tons/hr.)

How driven each by Elec. motor

cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

ments

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Two of 100 tons/hr.

independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

No. and size: In Machinery Spaces 4 of 3" in each space; 3" in tunnel well In Pump Room —

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 of 6" No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 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

AIR RECEIVERS:—Have they been made under survey *Yes* State No. of Report or Certificate *✓*
Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*
Can the internal surfaces of the receivers be examined and cleaned *Yes* Is a drain fitted at the lowest part of each receiver *Yes*
Injection Air Receivers, No. *None* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*
Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *✓*
Starting Air Receivers, No. *3* Total cubic capacity *696 cub. ft* Internal diameter *5'-0"* thickness *1 3/8"*
Seamless, lap welded or riveted longitudinal joint *TR. 80 lb. but Straps* Material *Steel* Range of tensile strength *30-34 tons* Working pressure *604*
by Rules *600*
Actual *600*

IS A DONKEY BOILER FITTED? *Yes - Two* If so, *are* reports now forwarded? *Yes*
Are the donkey boilers intended to be used for domestic purposes only *No - For domestic, & for heating C.W. for Eng. and for heating coils in OF 20*
PLANS. Are approved plans forwarded herewith for Shafting *Crank shaft* Receivers *24/4/39* Separate Fuel Tanks *20" x 26 1/4"*
(If not, state date of approval.) *TS. 5/4/39*
Donkey Boilers *General Pumping Arrangements 9/6/39* Pumping Arrangements in Machinery Space *28/6/39*
Oil Fuel Burning Arrangements *26/11/39*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*
State the principal additional spare gear supplied *One Main Eng. Piston Head, 2 lower piston rods, 1 light skirt for piston, one upper piston rod, one M.E. Cyl. liner, one side connecting rod both end spherical bearing, one main bearing (spherical), one top end & one both end bearings for Scavenge pump, one relief valve complete for M. Engine Cylinders, one set of ball bearings & roller bearings for crank shaft drive.*

The foregoing is a correct description.

SWAN, HUNTER, & WIGAM RICHARDSON, LTD.

G. J. Sturdy

Manufacturer.

Dates of Survey while building
During progress of work in shops--
During erection on board vessel--
Total No. of visits *152*

Dates of Examination of principal parts—Cylinders *27-12-39* Covers *✓* Pistons *27-12-39* Rods *27-12-39* Connecting rods *27-12-39*
Crank shafts *2-4-40* Flywheel shafts *as Crank shaft* Thrust shafts *as Crank shaft* Intermediate shafts *22/11/39 to 22/2/40* Tube shaft *22/11/39 to 22/2/40*
Screw shafts *5* Propellers *14-3-40* Stern tubes *5-22-2-40* Engine seatings *1-12-39* Engines holding down bolts *6-24-40*
Completion of fitting sea connections *1-12-39* Completion of pumping arrangements *14/6/40* Engines tried under working conditions *at wharf 29th & 30th Nov*
Crank shafts Material *Steel* Identification Mark *5034 J.L. 9245 L.P.* Flywheel shafts Material *Steel* Identification Mark *as Crank shafts*
Thrust shafts Material *Steel* Identification Mark *as Crank shafts* Intermediate shafts, Material *Steel* Identification Marks *See be*
Tube shafts Material *Steel* Identification Mark *—* Screw shafts Material *Steel* Identification Marks *See be*

Identification Marks on Air Receivers (all three Receivers)
LLOYD'S TEST
WT 800 LBS
WP 600 LBS
6-11-39 AW AW.
Identification marks of Intermediate Shafts
From AFT.
PORT. STARBOARD
AB 14547 J.L. 14624 J.L.
BC 14565 J.L. 14631 J.L.
CD 14635 J.L. 14625 J.L.
DE 14639 J.L. 14636 J.L.
EF 14600 J.L. 14626 J.L.
FG 14632 J.L. 14633 J.L.
GH 14599 J.L. 14598 J.L.

Is the flash point of the oil to be used over 150° F. *Yes*
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes*
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *No* If so, have the requirements of the Rules been complied with *✓*
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *✓*
Is this machinery duplicate of a previous case *No* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Machinery has been built and installed under special survey in accordance with the Society's Rules and approved plans. Nos 1, 2, 3, 4 & 5 holds were, towards the latter part of the subdivision and suitable additional hold bilge suction were fitted as shown in attached Blueprints. The machinery was tried under full load on test bed in the works, and afterwards with vessel moored at wharf, and found satisfactory. The Bedplates, Columns & cuttable of the Main Engines are fabricated construction and the electric welding was examined after the Shop full load test. Found in good order. The materials and workmanship are good.

The Machinery of this vessel is eligible, in my opinion, for the Records of LMC, 6.40., TS. C.
2 DB. 105 lbs. OIL ENGS. Fitted for OF. 6.40., FP above 150° F.
RS. Re of Transfer Pump Control: The Sight glass in the OF overflow pipe to the one ton OF Drain Tank is on the aft end of E.R. on S. side of Cyl. and is visible from the Starting platform of the Port M. Eng. A REMOTE CONTROL for each of the two OF Trans. Pumps (both on P. side aft in E.R.) is fitted on the front of Port Eng. at Board, and is under the control of the Eng. on Watch.

The amount of Entry Fee *£ 153: 16: 25 JUN 1940*
Special *£ 23: 4: 9*
Eligible Welded Construction *£ 9: 9: 9*
Donkey Boilers *£ 9: 9: 9*
Starting Air Receivers *£ 9: 9: 9*
Travelling Expenses (if any) *£ 9: 9: 9*
When applied for, *25 JUN 1940*
When received, *8th July 1940*

Committee's Minute
Assigned

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Foundation