

REPORT ON MACHINERY.

Std. No. 29313

No. 80612

Received at London Office 10 Oct 1926

Date of writing Report 19 When handed in at Local Office 2. 9. 1926 Port of

No. in Survey held at Newcastle, N. Tyne Date, First Survey 12. 2. 26 Last Survey 6. 9. 1926
 Reg. Book. 8/5 Cairnholm (Number of Visits 45)
 on the Porte reduction gear engine & turbines for M. P. K. & Sons 25. 3. 217 Tons { Gross 5019
 Net 3024

Builder Built at Sunderland By whom built M. P. K. & Sons When built 1926
 Engines made at Waltham By whom made Parsons Marine Turbine Co. when made 1926
 Boilers made at Waltham By whom made Forbes & Co. when made 1926
 Registered Horse Power 530 NHP Owners Cairn's Noble & Co Port belonging to Newcastle
 Shaft Horse Power at Full Power 2875 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted YES

TURBINE ENGINES, &c.—Description of Engines Porte reduction gear turbines No. of Turbines 3 H.P. & L.P.
 Diameter of Rotor Shaft Journals, H.P. 4" 1/4" L.P. 5 1/2" Diameter of Pinion Shaft 4 1/2" L.P. 5 1/2"
 Diameter of Journals 10 1/2" Distance between Centres of Bearings 6'-0" Diameter of Pitch Circle 41' 7 1/2" L.P. 11' 7 1/2"
 Diameter of Wheel Shaft 16 1/2" Distance between Centres of Bearings 6'-1 7/8" Diameter of Pitch Circle of Wheel 64' 0"
 Width of Face 14' 37' Diameter of Thrust Shaft under Collars 16 3/4" Diameter of Tunnel Shaft 13 1/2"
 No. of Screw Shafts ONE Diameter of same as per rule 14' 17" as fitted 14' 6" Diameter of Propeller 19'-0" Pitch of Propeller 15'-4"
 No. of Blades 4 State whether Moveable YES Total Surface 100 sq Diameter of Rotor Drum, H.P. 1 P L.P. astern
 Thickness at Bottom of Groove, H.P. L.P. Revs. per Minute at Full Power, Turbine 4320 Propeller 81.5

PARTICULARS OF BLADING.

	H. P.				L. P.				ASTERN.			
	HEIGHT OF BLADES.	MEAN DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	MEAN DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	MEAN DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	MEAN DIAMETER AT TIP.	NO. OF ROWS.
EXPANSION	5/8"	1'-1"	9	1 1/8"	1'-1 1/4"	7	1 1/2"	1'-1 1/4"	6	2 ROWS IMPULSE	2'-1 1/2"	MEAN DIA
1ST	1 1/8"	1'-1 1/4"	7	1 1/2"	1'-1 1/4"	7	1 1/2"	1'-1 1/4"	6	2 ROWS IMPULSE	2'-1 1/2"	MEAN DIA
2ND	1 3/8"	1'-3 1/4"	6	1 5/8"	1'-3 1/4"	6	1 5/8"	1'-3 1/4"	6	2 ROWS IMPULSE	3'-5 3/4"	
3RD	1 7/8"	1'-4 3/4"	5	1 7/8"	1'-4 3/4"	5	1 7/8"	1'-4 3/4"	5	2 ROWS IMPULSE	3'-5 3/4"	
4TH				2 1/8"	1'-10 1/8"	3	2 1/8"	1'-10 1/8"	3	2 ROWS IMPULSE	3'-5 3/4"	
5TH				2 1/8"	1'-10 1/8"	3	2 1/8"	1'-10 1/8"	3	2 ROWS IMPULSE	3'-5 3/4"	
6TH				2 1/8"	1'-10 1/8"	3	2 1/8"	1'-10 1/8"	3	2 ROWS IMPULSE	3'-5 3/4"	
7TH				2 1/8"	1'-10 1/8"	3	2 1/8"	1'-10 1/8"	3	2 ROWS IMPULSE	3'-5 3/4"	
8TH				2 1/8"	1'-10 1/8"	3	2 1/8"	1'-10 1/8"	3	2 ROWS IMPULSE	3'-5 3/4"	
9TH				2 1/8"	1'-10 1/8"	3	2 1/8"	1'-10 1/8"	3	2 ROWS IMPULSE	3'-5 3/4"	
10TH				2 1/8"	1'-10 1/8"	3	2 1/8"	1'-10 1/8"	3	2 ROWS IMPULSE	3'-5 3/4"	

No. and size of Feed pumps Two main 9 1/2" x 7" x 21" One aux 7" x 5" x 12"No. and size of Bilge pumps One 7" x 8" x 18"No. and size of Bilge suction in Engine Room 3 - 3" 1 - 5"In Holds, &c. FORDHOLD 2 - 3" MAIN 2 - 3" NO 3 HOLD 2 - 2 3/4"
DEEP TANK 2 - 3 1/4"No. of Bilge Injections 1 sizes 7/2" Connected to condenser, or to circulating pump PUMP Is a separate Donkey Suction fitted in Engine Room & size 1-5"Are all the bilge suction pipes fitted with roses YES Are the roses in Engine room always accessible YESAre all connections with the sea direct on the skin of the ship YES Are they Valves or Cocks BOTHAre 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 BOTHAre 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 YESWhat pipes are carried through the bunkers BILGE PIPES How are they protected Under bent steel platesAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YESAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YESIs the Screw Shaft Tunnel watertight YES Is it fitted with a watertight door YES worked from 2nd DeckBOILERS, &c.—(Letter for record (S) Manufacturers of Steel 3.SBTotal Heating Surface of Boilers 6646 sq Is Forced Draft fitted YES No. and Description of Boilers 3.SBWorking Pressure 180 LBS Tested by hydraulic pressure to Date of test No. of Certificate Can each boiler be worked separately YES Area of fire grate in each boiler No. and Description of Safety Valves to Area of each valve Pressure to which they are adjusted Are they fitted with easing gear Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams Long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps Percentage of strength of longitudinal joint Working pressure of shell by rules Size of manhole in shell Size of compensating ring No. and Description of Furnaces in each Boiler Material Outside diameter Length of plain part Thickness of plates Description of longitudinal joint No. of strengthening rings Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and Thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each Working pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets Working pressure of shell by rules Crown plates: Thickness How stayed

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11143-0103

SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____ Rpt.
Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

IS A DONKEY BOILER FITTED? _____ If so, is a report now forwarded? _____

SPARE GEAR. State the articles supplied: In accordance with the Rules in full Schedule attached

The foregoing is a correct description,

Manufacturer. _____

1926
Dates of Survey while building
During progress of work in shops - - Feb. 12. 19. 23. 25. Mar. 8. 8. 12. 16. 17. 23. 24. 30. 31. Apr. 7. 9. 15. 19. 22. 23. 26. 30. May 3. 4. 6. 7. 11. 14. 21. 28.
During erection on board vessel - - June 1. 4. 8. 11. 15. 17. 20. July 5. 9. 14. 26. 30. Aug. 9. 30. Sept. 2. 6.
Total No. of visits 45. Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Casings 30. 3. 26. Rotors 11. 5. 26. Blading 22. 4. 26. Gearing 28. 5. 26.
Rotor shaft 26. 4. 26. Thrust shaft 26. 4. 26. Tunnel shafts 8. 3. 26. Screw shaft 18. 5. 26. Propeller 28. 5. 26.
Stern tube 19. 2. 26. Steam pipes tested 26. 7. 26. Engine and boiler settings 14-4-26 Engines holding down bolts 11. 8. 26.
Completion of pumping arrangements 11. 8. 26. Boilers fixed 4. 8. 26. Engines tried under steam 14-9-26 (Sld)
Main boiler safety valves adjusted 16-9-26 (Sld) Thickness of adjusting washers PT 1/4 3/8 3/4 1 1/2 1 3/4 2 1/2 3 1/2 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 51 1/2 52 1/2 53 1/2 54 1/2 55 1/2 56 1/2 57 1/2 58 1/2 59 1/2 60 1/2 61 1/2 62 1/2 63 1/2 64 1/2 65 1/2 66 1/2 67 1/2 68 1/2 69 1/2 70 1/2 71 1/2 72 1/2 73 1/2 74 1/2 75 1/2 76 1/2 77 1/2 78 1/2 79 1/2 80 1/2 81 1/2 82 1/2 83 1/2 84 1/2 85 1/2 86 1/2 87 1/2 88 1/2 89 1/2 90 1/2 91 1/2 92 1/2 93 1/2 94 1/2 95 1/2 96 1/2 97 1/2 98 1/2 99 1/2 100 1/2 101 1/2 102 1/2 103 1/2 104 1/2 105 1/2 106 1/2 107 1/2 108 1/2 109 1/2 110 1/2 111 1/2 112 1/2 113 1/2 114 1/2 115 1/2 116 1/2 117 1/2 118 1/2 119 1/2 120 1/2 121 1/2 122 1/2 123 1/2 124 1/2 125 1/2 126 1/2 127 1/2 128 1/2 129 1/2 130 1/2 131 1/2 132 1/2 133 1/2 134 1/2 135 1/2 136 1/2 137 1/2 138 1/2 139 1/2 140 1/2 141 1/2 142 1/2 143 1/2 144 1/2 145 1/2 146 1/2 147 1/2 148 1/2 149 1/2 150 1/2 151 1/2 152 1/2 153 1/2 154 1/2 155 1/2 156 1/2 157 1/2 158 1/2 159 1/2 160 1/2 161 1/2 162 1/2 163 1/2 164 1/2 165 1/2 166 1/2 167 1/2 168 1/2 169 1/2 170 1/2 171 1/2 172 1/2 173 1/2 174 1/2 175 1/2 176 1/2 177 1/2 178 1/2 179 1/2 180 1/2 181 1/2 182 1/2 183 1/2 184 1/2 185 1/2 186 1/2 187 1/2 188 1/2 189 1/2 190 1/2 191 1/2 192 1/2 193 1/2 194 1/2 195 1/2 196 1/2 197 1/2 198 1/2 199 1/2 200 1/2 201 1/2 202 1/2 203 1/2 204 1/2 205 1/2 206 1/2 207 1/2 208 1/2 209 1/2 210 1/2 211 1/2 212 1/2 213 1/2 214 1/2 215 1/2 216 1/2 217 1/2 218 1/2 219 1/2 220 1/2 221 1/2 222 1/2 223 1/2 224 1/2 225 1/2 226 1/2 227 1/2 228 1/2 229 1/2 230 1/2 231 1/2 232 1/2 233 1/2 234 1/2 235 1/2 236 1/2 237 1/2 238 1/2 239 1/2 240 1/2 241 1/2 242 1/2 243 1/2 244 1/2 245 1/2 246 1/2 247 1/2 248 1/2 249 1/2 250 1/2 251 1/2 252 1/2 253 1/2 254 1/2 255 1/2 256 1/2 257 1/2 258 1/2 259 1/2 260 1/2 261 1/2 262 1/2 263 1/2 264 1/2 265 1/2 266 1/2 267 1/2 268 1/2 269 1/2 270 1/2 271 1/2 272 1/2 273 1/2 274 1/2 275 1/2 276 1/2 277 1/2 278 1/2 279 1/2 280 1/2 281 1/2 282 1/2 283 1/2 284 1/2 285 1/2 286 1/2 287 1/2 288 1/2 289 1/2 290 1/2 291 1/2 292 1/2 293 1/2 294 1/2 295 1/2 296 1/2 297 1/2 298 1/2 299 1/2 300 1/2 301 1/2 302 1/2 303 1/2 304 1/2 305 1/2 306 1/2 307 1/2 308 1/2 309 1/2 310 1/2 311 1/2 312 1/2 313 1/2 314 1/2 315 1/2 316 1/2 317 1/2 318 1/2 319 1/2 320 1/2 321 1/2 322 1/2 323 1/2 324 1/2 325 1/2 326 1/2 327 1/2 328 1/2 329 1/2 330 1/2 331 1/2 332 1/2 333 1/2 334 1/2 335 1/2 336 1/2 337 1/2 338 1/2 339 1/2 340 1/2 341 1/2 342 1/2 343 1/2 344 1/2 345 1/2 346 1/2 347 1/2 348 1/2 349 1/2 350 1/2 351 1/2 352 1/2 353 1/2 354 1/2 355 1/2 356 1/2 357 1/2 358 1/2 359 1/2 360 1/2 361 1/2 362 1/2 363 1/2 364 1/2 365 1/2 366 1/2 367 1/2 368 1/2 369 1/2 370 1/2 371 1/2 372 1/2 373 1/2 374 1/2 375 1/2 376 1/2 377 1/2 378 1/2 379 1/2 380 1/2 381 1/2 382 1/2 383 1/2 384 1/2 385 1/2 386 1/2 387 1/2 388 1/2 389 1/2 390 1/2 391 1/2 392 1/2 393 1/2 394 1/2 395 1/2 396 1/2 397 1/2 398 1/2 399 1/2 400 1/2 401 1/2 402 1/2 403 1/2 404 1/2 405 1/2 406 1/2 407 1/2 408 1/2 409 1/2 410 1/2 411 1/2 412 1/2 413 1/2 414 1/2 415 1/2 416 1/2 417 1/2 418 1/2 419 1/2 420 1/2 421 1/2 422 1/2 423 1/2 424 1/2 425 1/2 426 1/2 427 1/2 428 1/2 429 1/2 430 1/2 431 1/2 432 1/2 433 1/2 434 1/2 435 1/2 436 1/2 437 1/2 438 1/2 439 1/2 440 1/2 441 1/2 442 1/2 443 1/2 444 1/2 445 1/2 446 1/2 447 1/2 448 1/2 449 1/2 450 1/2 451 1/2 452 1/2 453 1/2 454 1/2 455 1/2 456 1/2 457 1/2 458 1/2 459 1/2 460 1/2 461 1/2 462 1/2 463 1/2 464 1/2 465 1/2 466 1/2 467 1/2 468 1/2 469 1/2 470 1/2 471 1/2 472 1/2 473 1/2 474 1/2 475 1/2 476 1/2 477 1/2 478 1/2 479 1/2 480 1/2 481 1/2 482 1/2 483 1/2 484 1/2 485 1/2 486 1/2 487 1/2 488 1/2 489 1/2 490 1/2 491 1/2 492 1/2 493 1/2 494 1/2 495 1/2 496 1/2 497 1/2 498 1/2 499 1/2 500 1/2 501 1/2 502 1/2 503 1/2 504 1/2 505 1/2 506 1/2 507 1/2 508 1/2 509 1/2 510 1/2 511 1/2 512 1/2 513 1/2 514 1/2 515 1/2 516 1/2 517 1/2 518 1/2 519 1/2 520 1/2 521 1/2 522 1/2 523 1/2 524 1/2 525 1/2 526 1/2 527 1/2 528 1/2 529 1/2 530 1/2 531 1/2 532 1/2 533 1/2 534 1/2 535 1/2 536 1/2 537 1/2 538 1/2 539 1/2 540 1/2 541 1/2 542 1/2 543 1/2 544 1/2 545 1/2 546 1/2 547 1/2 548 1/2 549 1/2 550 1/2 551 1/2 552 1/2 553 1/2 554 1/2 555 1/2 556 1/2 557 1/2 558 1/2 559 1/2 560 1/2 561 1/2 562 1/2 563 1/2 564 1/2 565 1/2 566 1/2 567 1/2 568 1/2 569 1/2 570 1/2 571 1/2 572 1/2 573 1/2 574 1/2 575 1/2 576 1/2 577 1/2 578 1/2 579 1/2 580 1/2 581 1/2 582 1/2 583 1/2 584 1/2 585 1/2 586 1/2 587 1/2 588 1/2 589 1/2 590 1/2 591 1/2 592 1/2 593 1/2 594 1/2 595 1/2 596 1/2 597 1/2 598 1/2 599 1/2 600 1/2 601 1/2 602 1/2 603 1/2 604 1/2 605 1/2 606 1/2 607 1/2 608 1/2 609 1/2 610 1/2 611 1/2 612 1/2 613 1/2 614 1/2 615 1/2 616 1/2 617 1/2 618 1/2 619 1/2 620 1/2 621 1/2 622 1/2 623 1/2 624 1/2 625 1/2 626 1/2 627 1/2 628 1/2 629 1/2 630 1/2 631 1/2 632 1/2 633 1/2 634 1/2 635 1/2 636 1/2 637 1/2 638 1/2 639 1/2 640 1/2 641 1/2 642 1/2 643 1/2 644 1/2 645 1/2 646 1/2 647 1/2 648 1/2 649 1/2 650 1/2 651 1/2 652 1/2 653 1/2 654 1/2 655 1/2 656 1/2 657 1/2 658 1/2 659 1/2 660 1/2 661 1/2 662 1/2 663 1/2 664 1/2 665 1/2 666 1/2 667 1/2 668 1/2 669 1/2 670 1/2 671 1/2 672 1/2 673 1/2 674 1/2 675 1/2 676 1/2 677 1/2 678 1/2 679 1/2 680 1/2 681 1/2 682 1/2 683 1/2 684 1/2 685 1/2 686 1/2 687 1/2 688 1/2 689 1/2 690 1/2 691 1/2 692 1/2 693 1/2 694 1/2 695 1/2 696 1/2 697 1/2 698 1/2 699 1/2 700 1/2 701 1/2 702 1/2 703 1/2 704 1/2 705 1/2 706 1/2 707 1/2 708 1/2 709 1/2 710 1/2 711 1/2 712 1/2 713 1/2 714 1/2 715 1/2 716 1/2 717 1/2 718 1/2 719 1/2 720 1/2 721 1/2 722 1/2 723 1/2 724 1/2 725 1/2 726 1/2 727 1/2 728 1/2 729 1/2 730 1/2 731 1/2 732 1/2 733 1/2 734 1/2 735 1/2 736 1/2 737 1/2 738 1/2 739 1/2 740 1/2 741 1/2 742 1/2 743 1/2 744 1/2 745 1/2 746 1/2 747 1/2 748 1/2 749 1/2 750 1/2 751 1/2 752 1/2 753 1/2 754 1/2 755 1/2 756 1/2 757 1/2 758 1/2 759 1/2 760 1/2 761 1/2 762 1/2 763 1/2 764 1/2 765 1/2 766 1/2 767 1/2 768 1/2 769 1/2 770 1/2 771 1/2 772 1/2 773 1/2 774 1/2 775 1/2 776 1/2 777 1/2 778 1/2 779 1/2 780 1/2 781 1/2 782 1/2 783 1/2 784 1/2 785 1/2 786 1/2 787 1/2 788 1/2 789 1/2 790 1/2 791 1/2 792 1/2 793 1/2 794 1/2 795 1/2 796 1/2 797 1/2 798 1/2 799 1/2 800 1/2 801 1/2 802 1/2 803 1/2 804 1/2 805 1/2 806 1/2 807 1/2 808 1/2 809 1/2 810 1/2 811 1/2 812 1/2 813 1/2 814 1/2 815 1/2 816 1/2 817 1/2 818 1/2 819 1/2 820 1/2 821 1/2 822 1/2 823 1/2 824 1/2 825 1/2 826 1/2 827 1/2 828 1/2 829 1/2 830 1/2 831 1/2 832 1/2 833 1/2 834 1/2 835 1/2 836 1/2 837 1/2 838 1/2 839 1/2 840 1/2 841 1/2 842 1/2 843 1/2 844 1/2 845 1/2 846 1/2 847 1/2 848 1/2 849 1/2 850 1/2 851 1/2 852 1/2 853 1/2 854 1/2 855 1/2 856 1/2 857 1/2 858 1/2 859 1/2 860 1/2 861 1/2 862 1/2 863 1/2 864 1/2 865 1/2 866 1/2 867 1/2 868 1/2 869 1/2 870 1/2 871 1/2 872 1/2 873 1/2 874 1/2 875 1/2 876 1/2 877 1/2 878 1/2 879 1/2 880 1/2 881 1/2 882 1/2 883 1/2 884 1/2 885 1/2 886 1/2 887 1/2 888 1/2 889 1/2 890 1/2 891 1/2 892 1/2 893 1/2 894 1/2 895 1/2 896 1/2 897 1/2 898 1/2 899 1/2 900 1/2 901 1/2 902 1/2 903 1/2 904 1/2 905 1/2 906 1/2 907 1/2 908 1/2 909 1/2 910 1/2 911 1/2 912 1/2 913 1/2 914 1/2 915 1/2 916 1/2 917 1/2 918 1/2 919 1/2 920 1/2 921 1/2 922 1/2 923 1/2 924 1/2 925 1/2 926 1/2 927 1/2 928 1/2 929 1/2 930 1/2 931 1/2 932 1/2 933 1/2 934 1/2 935 1/2 936 1/2 937 1/2 938 1/2 939 1/2 940 1/2 941 1/2 942 1/2 943 1/2 944 1/2 945 1/2 946 1/2 947 1/2 948 1/2 949 1/2 950 1/2 951 1/2 952 1/2 953 1/2 954 1/2 955 1/2 956 1/2 957 1/2 958 1/2 959 1/2 960 1/2 961 1/2 962 1/2 963 1/2 964 1/2 965 1/2 966 1/2 967 1/2 968 1/2 969 1/2 970 1/2 971 1/2 972 1/2 973 1/2 974 1/2 975 1/2 976 1/2 977 1/2 978 1/2 979 1/2 980 1/2 981 1/2 982 1/2 983 1/2 984 1/2 985 1/2 986 1/2 987 1/2 988 1/2 989 1/2 990 1/2 991 1/2 992 1/2 993 1/2 994 1/2 995 1/2 996 1/2 997 1/2 998 1/2 999 1/2 1000 1/2 1001 1/2 1002 1/2 1003 1/2 1004 1/2 1005 1/2 1006 1/2 1007 1/2 1008 1/2 1009 1/2 1010 1/2 1011 1/2 1012 1/2 1013 1/2 1014 1/2 1015 1/2 1016 1/2 1017 1/2 1018 1/2 1019 1/2 1020 1/2 1021 1/2 1022 1/2 1023 1/2 1024 1/2 1025 1/2 1026 1/2 1027 1/2 1028 1/2 1029 1/2 1030 1/2 1031 1/2 1032 1/2 1033 1/2 1034 1/2 1035 1/2 1036 1/2 1037 1/2 1038 1/2 1039 1/2 1040 1/2 1041 1/2 1042 1/2 1043 1/2 1044 1/2 1045 1/2 1046 1/2 1047 1/2 1048 1/2 1049 1/2 1050 1/2 1051 1/2 1052 1/2 1053 1/2 1054 1/2 1055 1/2 1056 1/2 1057 1/2 1058 1/2 1059 1/2 1060 1/2 1061 1/2 1062 1/2 1063 1/2 1064 1/2 1065 1/2 1066 1/2 1067 1/2 1068 1/2 1069 1/2 1070 1/2 1071 1/2 1072 1/2 1073 1/2 1074 1/2 1075 1/2 1076 1/2 1077 1/2 1078 1/2 1079 1/2 1080 1/2 1081 1/2 1082 1/2 1083 1/2 1084 1/2 1085 1/2 1086 1/2 1087 1/2 1088 1/2 1089 1/2 1090 1/2 1091 1/2 1092 1/2 1093 1/2 1094 1/2 1095 1/2 1096 1/2 1097 1/2 1098 1/2 1099 1/2 1100 1/2 1101 1/2 1102 1/2 1103 1/2 1104 1/2 1105 1/2 1106 1/2 1107 1/2 1108 1/2 1109 1/2 1110 1/2 1111 1/2 1112 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