

Iron Ore

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World iron ore production exceeded 1043 Mt in 1997, an increase of 1% relative to the previous record year and the highest level ever achieved. International trade also reached a record 475 Mt. Australia and Brazil continued to dominate the market and achieved their own records for the production and export of iron ore.

Canadian production and shipments exceeded 37 Mt, while exports exceeded 32 Mt, an increase of 4.5 Mt from 1996. Iron ore pellets and sinter accounted for 25 Mt and concentrates accounted for 12 Mt of shipments. There are three mining operations in the Labrador Trough area of northern Quebec and Labrador, and these account for over 96% of Canadian iron ore production. These mines belong to the Iron Ore Company of Canada (IOC), Quebec Cartier Mining Company (QCM), and Wabush Mines. There are also one mine in Ontario, the Algoma Ore Division (AOD) of Algoma Steel Inc.; a new magnetite mine in Newfoundland operated by Lodestone Limited; and by-product recovery of magnetite from two base-metal smelters in British Columbia. Although not included in the iron ore industry, QIT Fer et Titane Inc. mines ilmenite, an iron-titanium ore, near Havre-Saint-Pierre, Quebec, and produces pig iron as a co-product of titanium slag.

In 1997, IOC underwent major business changes while continuing with its operational and investment plans as announced in 1996. Early in 1997, IOC acquired half of its sales agency, IOC Ore Sales Co., from M.A. Hanna Company; the remaining half is held by Mitsubishi Corporation. This was followed by the announcement of a new president, Mr. John LeBoutillier, and the relocation of both the sales agency's and IOC's head offices to Montréal. In April, North Limited of Australia purchased the shares of IOC formerly held by Bethlehem Steel Corporation and National Steel Corporation and now holds a 59.31% interest. Under the new ownership arrangement, Mitsubishi has 21.77%, Labrador Iron Ore Royalty Income Fund, 11.97%, and Dofasco Inc.,

6.95%. North Limited continued its project to produce direct reduction-grade iron ore pellets with the installation of a flotation circuit.

In 1997, QCM celebrated its fortieth anniversary and shipped its 400 millionth tonne of iron ore. Mitsui & Co., Ltd. sold its 25% interest in QCM to CAEMI Mineração e Metalurgia S/A of Brazil. Dofasco Inc. and CAEMI now each own 50% of QCM. Mitsui, through its major shareholding in CAEMI, continues to have a connection with the Canadian iron ore producer.

Wabush Mines also underwent ownership changes in 1997. Cleveland-Cliffs Inc. purchased the 15.1% interest previously held by Inland Steel Company. Under the new ownership arrangement, Cleveland-Cliffs owns 22.8%, Stelco Inc., 37.9%, Dofasco Inc., 24.2%, and Acme Steel Company, 15.1%.

Lodestone Limited, which started mining in 1995 from the Bishop deposits in western Newfoundland, used magnetic separation to produce a magnetite concentrate for use as ballast on the Hibernia Gravity Base Structure.

In Ontario, Algoma Steel Inc. announced that the Algoma Ore Division would close in June 1998. Algoma has operated a series of open-pit and underground mines at Wawa for over 60 years, and also opened a sinter line there in 1939.

OUTLOOK

For Canadian iron ore mines, the prospect is for another year with shipments of around 37 Mt. The European steel industry's commitment to Canadian iron ore was reinforced with the launch of a 220 000-dwt (deadweight ton) bulk carrier designed principally for the iron ore movement from the Lower St. Lawrence to Rohstoffhandel GmbH's clients in Europe.

IOC will need to renegotiate its contract with Japanese steelmakers in 1998.

Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to Chapter 65. (2) Information in this review was current as of January 31, 1998.

TABLE 1. CANADA, IRON ORE PRODUCTION AND TRADE, 1996 AND 1997

| Item No. | 1996 | | 1997 ^p | |
|------------------------------------|---|------------------------|-----------------------|-----------|
| | (tonnes) ¹ | (\$000) | (tonnes) ¹ | (\$000) |
| PRODUCTION (mine shipments) | | | | |
| Newfoundland | 19 957 813 | 806 748 ^r | 21 847 537 | 883 436 |
| Quebec | 13 930 140 ^r | x | 14 913 915 | x |
| Ontario | 423 662 ^r | x | 420 639 | x |
| British Columbia | 88 353 ^r | 1 947 ^r | 102 404 | 2 296 |
| Total ² | 36 399 968 ^r | 1 321 727 ^r | 37 284 495 | 1 431 210 |
| IMPORTS | | | | |
| 2601.11 | Iron ore concentrates, non-agglomerated | | | |
| Brazil | 53 668 | 2 450 | 154 573 | 7 157 |
| United States | 37 107 | 840 | 32 302 | 952 |
| Venezuela | — | — | 2 279 | 65 |
| Germany | — | — | 180 | 6 |
| Japan | — | — | 190 | 4 |
| Turkey | — | — | 27 | 1 |
| South Africa | 201 | 7 | 41 | 1 |
| Mauritania | — | — | 46 | 1 |
| Greenland | 81 | 3 | 14 | ... |
| Ireland | — | — | 9 | ... |
| France | — | — | 8 | ... |
| United Kingdom | — | — | 7 | ... |
| China, People's Republic of | 26 ^r | 1 ^r | 5 | ... |
| Tanzania | — | — | 4 | ... |
| Chile | — | — | 3 | ... |
| Peru | — | — | 2 | ... |
| Ghana | — | — | 2 | ... |
| Total | 91 083 ^r | 3 301 ^r | 189 692 | 8 187 |
| 2601.12 | Iron ore, agglomerated | | | |
| United States | 6 193 084 | 299 944 | 6 281 395 | 314 503 |
| Brazil | 589 365 | 27 576 | 509 495 | 24 988 |
| Mexico | — | — | 50 560 | 3 118 |
| Venezuela | — | — | 50 094 | 2 104 |
| Mali | — | — | 23 | 1 |
| United Kingdom | — | — | 4 | ... |
| Norway | — | — | 2 | ... |
| South Africa | — | — | 2 | ... |
| Total | 6 782 449 | 327 520 | 6 891 575 | 344 714 |
| EXPORTS | | | | |
| 2601.11 | Iron ore concentrates, non-agglomerated | | | |
| Germany | 2 694 890 | 67 206 ^r | 2 523 619 | 71 029 |
| United Kingdom | 2 059 364 | 49 779 | 2 524 558 | 65 032 |
| France | 1 484 402 | 34 633 | 1 768 933 | 42 240 |
| Netherlands | 1 280 928 | 28 053 ^r | 1 607 459 | 39 871 |
| Korea, Republic of | 662 830 | 14 667 ^r | 944 662 | 23 109 |
| Japan | 1 005 061 | 21 199 ^r | 998 359 | 22 637 |
| United States | 520 373 | 15 258 | 595 450 | 14 122 |
| Philippines | 338 655 | 7 616 | 379 672 | 8 492 |
| China, People's Republic of | 248 246 | 5 172 | 298 476 | 7 235 |
| Spain | 161 956 | 3 587 | 116 845 | 2 760 |
| Belgium | 90 851 | 1 876 | 92 502 | 2 465 |
| Total | 10 547 556 | 249 046 ^r | 11 850 535 | 298 992 |
| 2601.12 | Iron ore, agglomerated | | | |
| United States | 9 229 247 | 425 812 | 9 306 053 | 425 307 |
| United Kingdom | 1 621 953 | 68 786 ^r | 2 362 004 | 111 631 |
| Netherlands | 593 173 | 23 030 ^r | 2 228 277 | 106 249 |
| Germany | 1 776 495 | 75 949 ^r | 1 702 742 | 80 579 |
| Italy | 1 425 248 | 65 482 ^r | 1 491 564 | 72 559 |
| Belgium | 1 306 540 | 54 950 ^r | 751 478 | 35 949 |
| Australia | — | — | 628 991 | 31 364 |
| Korea, Republic of | 216 363 | 8 215 ^r | 546 923 | 26 369 |
| France | — | — | 559 495 | 26 117 |
| China, People's Republic of | 475 187 | 19 075 ^r | 531 336 | 25 421 |
| Portugal | 124 456 | 5 777 ^r | 191 804 | 9 361 |
| Taiwan | 241 150 | 10 192 ^r | 101 540 | 4 653 |
| Norway | — | — | 44 769 | 2 166 |
| Turkey | — | — | 42 312 | 1 970 |
| Spain | 264 456 | 11 824 | — | — |
| Iceland | 21 002 | 790 ^r | — | — |
| Mexico | 77 334 | 13 931 | — | — |
| Total | 17 372 604 | 783 813 ^r | 20 489 288 | 959 695 |

TABLE 1 (cont'd)

| Item No. | 1996 | | 1997 ^p | |
|---|-------------------------|----------------------|-----------------------|-----------|
| | (tonnes) ¹ | (\$000) | (tonnes) ¹ | (\$000) |
| EXPORTS (cont'd) | | | | |
| Total exports, all classes | | | | |
| United States | 9 749 620 | 441 070 | 9 901 503 | 439 429 |
| United Kingdom | 3 681 317 | 118 565 ^r | 4 886 562 | 176 662 |
| Germany | 4 471 385 | 143 155 ^r | 4 226 361 | 151 608 |
| Netherlands | 1 874 101 | 51 082 ^r | 3 835 736 | 146 120 |
| Italy | 1 425 248 | 65 481 ^r | 1 491 564 | 72 558 |
| France | 1 484 402 | 34 633 | 2 323 428 | 68 357 |
| Korea, Republic of | 879 193 | 22 882 ^r | 1 491 585 | 49 477 |
| Belgium | 1 397 391 | 56 825 ^r | 843 980 | 38 413 |
| China, People's Republic of | 723 433 | 24 247 ^r | 829 812 | 32 655 |
| Australia | — | — | 628 991 | 31 363 |
| Japan | 1 005 061 | 21 199 ^r | 998 359 | 22 636 |
| Portugal | 124 456 | 5 776 ^r | 191 804 | 9 361 |
| Philippines | 338 655 | 7 615 ^r | 379 672 | 8 491 |
| Taiwan | 241 150 | 10 192 ^r | 101 540 | 4 653 |
| Spain | 426 412 | 15 410 | 116 845 | 2 760 |
| Norway | — | — | 44 769 | 2 166 |
| Turkey | — | — | 42 312 | 1 970 |
| Total | 27 821 824 | 1 018 132 | 32 334 823 | 1 258 679 |
| Consumption of iron ore at Canadian iron and steel plants | 14 308 328 ^r | .. | 14 359 128 | |

Sources: Natural Resources Canada; Statistics Canada; American Iron Ore Institute.

— Nil; .. Not available; ... Amount too small to be expressed; ^p Preliminary; ^r Revised; ^x Confidential.¹ Dry tonnes for production (shipments) by province, natural weight for imports and exports. ² Total iron ore shipments include shipments of by-product iron ore.

TABLE 2. CANADA, IRON ORE SHIPMENTS, 1994-97

| Company and Location | Ore Mined | Product Shipped | 1994 | 1995 | 1996 | 1997 ^p |
|--|---------------------------------|---------------------|------------------------------|--------|--------|---------------------|
| | | | (000 tonnes, natural or wet) | | | |
| Algoma Ore Division Algoma Steel Inc. Wawa, Ontario | Siderite | Sinter ¹ | 788 | 997 | 733 | 795 |
| Iron Ore Company of Canada Schefferville, Quebec | Hematite, goethite and limonite | Direct shipping | — | — | — | — |
| Carol Lake, Labrador | Specular hematite and magnetite | Concentrate | 5 475 | 4 634 | 4 038 | 4 678 |
| | | Acid pellets | 6 547 | 3 121 | 2 599 | .. |
| | | Fluxed pellets | 3 484 | 7 084 | 8 075 | 11 372 ^a |
| | | Chips | — | 188 | 169 | .. |
| Loadstone Limited | Magnetite | Concentrate | — | — | 300 | 100 |
| Quebec Cartier Mining Company Mount Wright, Quebec | Specular hematite | Concentrate | 8 206 | 7 759 | 7 264 | 7 132 |
| | | Acid pellets | 3 763 | 4 884 | 7 853 | 7 782 ^a |
| | | Fluxed pellets | 3 379 | 3 449 | 5 589 | .. |
| | | Low Si pellets | 1 025 | — | .. | .. |
| Wabush Mines Wabush, Labrador and Pointe-Noire, Québec | Specular hematite and magnetite | Acid pellets | 3 035 | 3 322 | 3 155 | 5 697 ^a |
| | | Fluxed pellets | 1 670 | 1 866 | 2 158 | .. |
| | | Concentrate | 369 | 135 | — | — |
| | | Chips | 2 | 105 | 24 | .. |
| British Columbia producers | Magnetite | Concentrate | 74 | 83 | 88 | 102 |
| Total | | | 37 817 | 37 627 | 36 824 | 37 658 |

Source: Natural Resources Canada.

— Nil; .. Not available; ^p Preliminary.^a Includes acid pellets, fluxed pellets and low Si pellets.¹ Includes about 400 000 t of iron-bearing material not from the mine.

TABLE 3. RECEIPTS, CONSUMPTION AND INVENTORIES OF IRON ORE AT CANADIAN IRON AND STEEL PLANTS, 1996 AND 1997

| | 1996 | 1997 |
|--|--------------|--------|
| | (000 tonnes) | |
| Receipts imported | 6 947 | 7 741 |
| Receipts from domestic sources | 7 477 | 6 750 |
| Total receipts at iron and steel plants | 14 424 | 14 492 |
| Consumption of iron ore | 14 308 | 14 360 |
| Inventory at docks, plants, mines and furnace yards, December 31 | 9 414 | 9 010 |
| Inventory change | 1 073 | -404 |

Source: American Iron Ore Association.

TABLE 4. WORLD IRON ORE PRODUCTION, 1995-97

| | 1995 | 1996 | 1997 |
|--------------------|-----------------------|-----------|-----------|
| | (000 tonnes, natural) | | |
| China | 250 390 | 250 510 | 250 000 |
| Brazil | 178 380 | 179 870 | 187 950 |
| Australia | 146 210 | 154 560 | 165 660 |
| Russian Federation | 78 350 | 72 140 | 71 900 |
| India | 66 750 | 67 260 | 67 000 |
| United States | 62 490 | 62 130 | 63 000 |
| Ukraine | 50 740 | 47 750 | 47 750 |
| Canada | 38 847 | 35 690 | 37 310 |
| South Africa | 32 650 | 30 830 | 33 230 |
| Sweden | 21 660 | 21 290 | 21 890 |
| Venezuela | 18 950 | 18 720 | 18 660 |
| Mauritania | 11 330 | 11 400 | 11 700 |
| Kazakstan | 6 010 | 6 010 | 6 010 |
| Korea, D.P.R. | 8 000 | 2 000 | 2 000 |
| Other countries | 51 873 | 51 990 | 59 850 |
| Total | 1 022 630 | 1 012 150 | 1 043 910 |

Sources: Natural Resources Canada; UNCTAD Intergovernmental Group of Experts on Iron Ore; UNCTAD Trust Fund Project on Iron Ore Information.

TABLE 5. SELECTED PRICES OF IRON ORE DESTINED FOR JAPAN AND EUROPE, SELECTED YEARS 1986-97

| Ore | Market | Source | 1986 | 1988 | 1990 | 1992 | 1994 | 1996 | 1997 |
|-------------------------------------|--------|------------------------|-------|-------|-------|-------|-------|-------|-------|
| (US¢/Fe Unit Dmt, f.o.b.) | | | | | | | | | |
| Fines (including concentrate) | Europe | CVRD | 26.26 | 23.50 | 30.80 | 33.10 | 26.47 | 30.00 | 30.15 |
| | | Iscor | 22.70 | 20.55 | 24.75 | .. | 20.60 | 23.10 | 23.35 |
| | | Kiruna | 27.90 | 26.00 | 35.70 | 36.50 | 28.10 | 32.70 | 32.70 |
| | Japan | Carol Lake | 26.50 | 23.69 | 31.78 | 33.15 | 26.15 | 30.00 | 30.00 |
| | | Mt. Wright | 26.50 | 23.69 | 31.78 | 33.15 | 26.15 | 30.00 | 30.00 |
| | | CVRD | 23.29 | 20.90 | 27.38 | 28.11 | 22.65 | 25.39 | 25.67 |
| | | Iscor | 20.23 | 17.75 | 23.62 | 24.24 | 19.52 | 21.89 | 22.13 |
| | | Hamersley ² | 25.56 | 23.31 | 30.54 | 31.35 | 25.26 | 28.33 | 28.64 |
| | | Carol Lake | 22.09 | 19.93 | 26.11 | 27.26 | 21.96 | 24.63 | 24.90 |
| Lump | Europe | Iscor | 26.70 | 22.34 | 33.00 | 32.29 | 28.00 | 32.13 | 32.13 |
| | | Hamersley ¹ | 36.20 | 36.00 | 49.97 | 48.28 | 40.28 | 46.82 | 45.91 |
| | Japan | CVRD | 23.29 | 21.89 | 29.22 | 29.00 | 24.38 | 27.63 | 27.63 |
| | | Iscor | 23.53 | 21.86 | 30.21 | 30.27 | 26.15 | 30.50 | 30.50 |
| | | Hamersley ² | 29.81 | 27.88 | 38.53 | 38.23 | 32.74 | 37.09 | 37.09 |
| Pellets | Europe | CVRD | 35.60 | 40.35 | 51.60 | 48.47 | 43.64 | 52.40 | 52.10 |
| | | Kiruna | 38.15 | 46.35 | 59.00 | 53.48 | 45.60 | 55.80 | 55.10 |
| | | Carol Lake | 36.50 | 39.95 | 52.58 | 49.35 | 44.00 | 53.80 | 53.25 |
| | | Mt. Wright | 36.50 | 39.95 | 52.58 | 49.35 | 44.00 | 53.80 | 53.25 |
| | Japan | CVRD | | | | | | | |
| | | (Nibrasco) | 34.73 | 37.93 | 48.50 | 45.57 | 41.03 | 49.26 | 48.98 |
| | | Savage River | 35.45 | 35.89 | 45.90 | 43.12 | 38.83 | 46.62 | 46.35 |

Source: *The Tex Report*.

.. Not available; Dmt Dry metric tonne; f.o.b. Free on board.

¹ c.i.f. Rotterdam; ² f.o.b. Dampier.

Note: Price is reported in cents, U.S. currency, for each percentage point of iron in a tonne of ore, e.g., at 30¢/Fe unit, ore grading 65% iron would bear a price of 65 x 30¢ = US\$19.50/t.