

IRON AND STEEL SCRAP

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Iron and steel scrap is a vital raw material for the production of new steel and cast-iron products. The steelmaking and foundry industries in the United States are highly dependent upon the ready availability of scrap from manufacturing operations and from the recovery of products that are no longer used or needed. The steel industry has been recycling steel scrap for more than 150 years. In 2000, domestic electric-arc-furnace (EAF) steel made primarily from recycled ferrous scrap in about 41 minimills was 47% of the total steel produced. Consistent with international usage and Federal Government policy, the U.S. Geological Survey (USGS) reports all data on iron and steel in metric units, unless otherwise noted.

Steel scrap recycling conserves raw materials, energy, and landfill space. The domestic steel industry recycles millions of metric tons per year of steel cans, automobiles, appliances, construction materials, and other steel products. In 2000, the industry's overall recycling rate was 64% (Steel Recycling Institute, [undated], A few facts about steel—North America's #1 recycled material, accessed May 11, 2001, at URL <http://www.recycle-steel.org/fact/main.html>). The remelting of scrap requires much less energy than the production of iron and steel products from iron ore. Each year, steel recycling saves the energy equivalent of the electrical power needed for 1 year by approximately one-fifth of the houses in the United States (about 18 million). Consumption of iron and steel scrap by remelting reduces the burden on landfill disposal facilities and prevents the accumulation of abandoned steel products in the environment. Every metric ton of steel recycled saves about 1.3 metric tons (t) of iron ore, 700 kilograms (kg) of coal, and 60 kg of limestone that would be needed to make a ton of steel from new raw materials.

In the United States, the primary source of obsolete steel is the automobile (Steel Recycling Institute, [undated], Recycling scrapped automobiles, accessed June 9, 1999, at URL <http://www.recycle-steel.org/cars/autorec.html>). Of the ferrous metals used to make a typical 2000 U.S. family vehicle, 45% was recycled metal. About 16,000 car dismantlers and 3,000 scrap processors produced about 12.7 million metric tons (Mt) of iron and steel scrap for recycling in 2000—enough steel to produce over 14 million new cars. The recycling rate of automobile scrap steel exceeded 95% in 2000 compared with 91% in 1999.

The recycling rate of obsolete appliance scrap had increased from 20% in 1988 to 81% in 1997, decreased to 72% in 1998, and rebounded to 84% in 2000. During 2000, more than 2.0 Mt of steel were recovered from recycled appliances (Steel Recycling Institute, [undated], A few facts about steel—North America's #1 recycled material, accessed May 6, 2000, at URL <http://www.recycle-steel.org/fact/main.html>). The typical appliance consists of about 75% steel, and from 25% to 100% of the steel used in appliances is recycled. The recycling rate of steel cans increased to 61% in 1997 from 15% in 1988, decreased to 56% in 1998, and rebounded to over 58% in 2000. The estimated rate of recycling of structural beams and plates

in 2000 was 95% and that of reinforcement bar and other materials was 48%. By 2002, an estimated 25% of all new homes built in the United States will be framed in recycled steel.

Minimills in which EAFs are used consumed greater quantities of direct reduced iron (DRI) to improve steel quality, and integrated steelmakers continued to use small quantities of DRI in blast furnaces as a process coolant. Mills often used a feed mix that has equal proportions of DRI, pig iron, and scrap. Although production in the U.S. steel industry increased during 2000, DRI production decreased by 6.6%.

The U.S. steel industry was adversely affected by the 1997 Asian financial crisis as Asian demand for steel and ferrous scrap declined, Asian currency exchange rates declined, and inexpensive steel became available for export to U.S. markets from excess Asian steel-producing capacity. Domestic steel product manufacturers welcomed inexpensive imports, but domestic steel producers were forced to reduce production and scrap consumption, which led to an oversupply of scrap and a plunge of scrap prices to the lowest levels in decades. By early 1999, the steel-producing and scrap industries were on the rebound owing primarily to resurging Asian economies and increasing steel demand in Asia and the United States.

As 2000 began, steel producers and scrap suppliers were increasingly optimistic that they were on track for a slow but certain recovery to precrisis economic levels. However, to the detriment of these sectors, the U.S. economic expansion—the longest in U.S. history—was showing signs of weakening. Concurrently, prices of electricity and natural gas were increasing significantly, and steel imports, which declined in 1999 below the 1998 level, began to increase again in 2000. Prices for steel products and ferrous scrap again plunged to record levels. Although for relief the U.S. steel industry filed trade cases against allegedly dumped hot-rolled carbon steel from 11 countries, it was becoming clear that a more fundamental problem was that the world and the United States had excess steelmaking capacity (Iron and Steelmaker, 2001; Matthews, 2001). Steelmakers had the capacity to produce 15% more steel than the world market demand in 2000, but were adding capacity at the rate of 2% each year.

Environment

In 1997, the U.S. Department of Energy (DOE) contracted to decommission and decontaminate three uranium enrichment plants at DOE's Oak Ridge, TN, nuclear reservation, which contained an estimated 100,000 t of radioactive metals (Paper, Allied-Industrial, Chemical and Energy Workers Union, [undated], Court finds that energy department plan to recycle radioactive metals from nuclear weapons factories poses great potential for environmental harm, accessed July 7, 1999, at URL http://biz.yahoo.com/prnews/990630/dc_court_e_2.html). DOE arranged to sell 6,000 t of contaminated nickel from a former nuclear weapons plant (American Metal Market, 2000a).

The Metals Industry Recycling Coalition, which consists of steel, nickel, zinc, copper and brass interests, lobbied to prevent radioactive-contaminated scrap from reaching the commerce stream. Their concern was that consumers would reject recycled goods made from radioactive scrap even if the level of radiation was deemed to be safe by the Government. At yearend 2000, the DOE issued a memorandum recommending the preparation of a full environmental impact statement on the proposed rulemaking governing the release of radioactive metal. The effect was to delay the release of radioactive metal into the commerce stream.

In addition to the radioactive materials, other potentially hazardous materials used in vehicles and durable goods are entering the recycling system (Wiener, 2001). Mercury switches have been suspected as contributors to high mercury readings in recent electric furnace stack tests. Steel air-bag inflators are sealed units that may deploy and injure employees sorting scrap and working in steel mill melt shops. Also, the propellant in the inflators, sodium azide, can be potentially hazardous to the environment. Substitution of mercury switches with pressure switches by vehicle manufacturers and removal of mercury switches and air bag inflators by dismantlers prior to shredding would ensure that injury to employees and the environment do not occur.

In July 1997, the U.S. Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standards for particulate matter (PM), which met resistance by the steel industry. The EPA reduced the standard for airborne PM from 10 microns to 2.5 microns (U.S. Environmental Protection Agency, 1998). The American Iron and Steel Institute and several other business groups initiated litigation against the EPA, and a three-judge panel of the U.S. Circuit Court of Appeals for the District of Columbia ruled that the agency overstepped its authority by interpreting the 1990 Clean Air Act so loosely that it unlawfully usurped Congress' legislative power. The full appeals court voted in October 1999 against reviewing the panel's decision (New Steel, 1999). Later, in May 2000, the Supreme Court entered the dispute by announcing that they will decide whether antipollution regulations must take the costs of compliance, not just health effects, into account. If the Court rules in favor of such cost-benefit analyses, allegedly unneeded and unfeasible air-quality standards might not be required of the steel industry, among others (Washington Times, 2000a).

Consumption

Domestic data for ferrous scrap were derived from voluntary monthly or annual surveys of U.S. scrap consuming operations by the USGS. About 45% of the known manufacturers of pig iron and raw steel responded to the surveys. Their responses represented about 59% of estimated total scrap consumption by this class of consumers. The remaining 41% of scrap consumption was estimated on the basis of prior reports. For manufacturers of steel castings, iron foundries, and miscellaneous users, about 31% of the surveyed establishments, which represented about 46% of estimated scrap consumption by these consumers, responded to the annual survey. Total consumption for these two classes of consumers was estimated by using statistical methods and prior reports. Actual survey data accounted for about 44% of total estimated scrap consumption by all classes of scrap consumers.

In 2000, brokers, dealers, and other outside sources supplied domestic consumers with 54 Mt of all types of ferrous scrap at an estimated delivered value of more than \$5.2 billion and exported 5.8 Mt (excluding used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) valued at \$1.0 billion (tables 1, 8, 11). In 1999, domestic consumers received 51 Mt of scrap at an estimated delivered value of about \$4.8 billion; exports totaled 5.5 Mt valued at \$758 million. This represented a tonnage increase during 2000 of nearly 6% for received quantities and over 4% for exported quantities. The total value of received and exported scrap grades increased 13% from that of 1999.

Raw steel production was 101.8 Mt in 2000 compared with 97.4 Mt in 1999 (American Iron and Steel Institute, 2000, p. 75). The shares of raw steel produced by electric and basic oxygen furnaces were 47% and 53%, respectively; EAF production increased slightly during 2000. In 2000, continuous cast steel production represented 96% of total raw steel production, as it had in 1999. Raw steel production capability was 118 Mt compared with 116 Mt in 1999.

Steel mills accounted for 84% of all scrap received from brokers, dealers, and other outside sources; iron foundries and miscellaneous users received 14%; and steel foundries received 2% (table 2). Apparent total domestic consumption of ferrous scrap was 54 Mt of net receipts (total receipts minus shipments) and 20 Mt of home scrap (table 1). Stocks of ferrous scrap at consumers' plants decreased by nearly 4% to 5.3 Mt (table 1). Total domestic consumption was about 74 Mt, a 4% increase since 1999 (table 1). The total market for U.S.-produced scrap (net receipts plus exports minus imports) was 56.5 Mt compared with 53.3 Mt in 1999. Feedstock used in electric furnaces by all iron and steel product manufacturers comprised scrap, 91%; pig iron, 5.3%; and DRI, 3.4% (table 4). Consumption of DRI was 11% greater than that of 1999.

Net shipments of all grades of steel mill products were 98.9 Mt, which was an increase of 2.7% from the 96.3 Mt shipped in 1999 (American Iron and Steel Institute, 2000, p. 27). Imports of steel mill products increased to 34.4 Mt from 32.4 Mt in 1999. Exports of steel mill products increased to 5.9 Mt from 4.9 Mt in 1999 (American Iron and Steel Institute, 2000, p. 45). The U.S. apparent supply of steel mill products increased to 120 Mt from 116 Mt in 1999. As a share of the U.S. market, imports of steel mill products increased to 29% from 28% in 1999. Pig iron production increased to 47.9 Mt from 46.3 Mt in 1999 (American Iron and Steel Institute, 2000, p. 80). As reported by the U.S. Census Bureau, iron castings shipments totaled an estimated 9.9 Mt for 1999 and 9.9 Mt (revised) for 1998. Steel castings shipments (including investment castings) totaled 1.2 Mt in 1999, the same as in 1998.

Transportation

In June 1999, the acquisition of Conrail, Inc by CSX Transportation, Inc. (42%) and Norfolk Southern Corp. (58%) reduced the number of large rail carriers from 3 to 2 in 23 States east of the Mississippi River, the District of Columbia, Quebec, and Ontario. The railroad system is the main form of transportation of ferrous scrap in the United States. A significant part of the industry experienced considerable deterioration of service, such as train backups, routing problems, lost cars and billing, erroneous information given to shippers, car unavailability, and mistakenly routed shipments.

These problems were based, for the most part, on the railroads' difficulty in integrating the computer systems of the merged railroads. All of this resulted in canceled contracts, smaller orders, and increased costs (American Metal Market, 1999, 2000b). One year later, the general opinion was that the railroads are performing much better (Robertson, 2000). The railroads invested in new track capacity in the Midwest, new terminal capacity in Buffalo, NY, and improvements at railyards throughout the Northeast and the Midwest. They also installed improved computer systems while working closely with shippers to solve delivery problems.

The Surface Transportation Board of the Federal Government ordered in March a moratorium on new consolidations in the railroad industry while it develops new rules for mergers. It was concerned about problems for shippers resulting from recent railroad mergers (Washington Times, 2000b). The steel industry, among others, expressed its opposition to more railroad consolidation because it no longer has an affordable option to choose truck transportation over rail transportation, given recent fuel price increases (American Metal Market, 2000c).

Prices

The average composite delivered price per metric ton of No. 1 heavy-melting steel scrap, calculated from prices per long ton published monthly by American Metal Market, was \$95.88. The price ranged from a high of \$120.06 in January to a low of \$77.36 in December (table 8). The average composite delivered price per ton of No. 1 heavy-melting steel scrap, calculated from prices per long ton published weekly in Iron Age Scrap Price Bulletin, was \$92.61; the price had ranged from a high of \$112.07 in January to a low of \$73.27 in November.

On the basis of weekly quotations by Iron Age Scrap Price Bulletin for 18-8 (18% chromium, 8% nickel) stainless steel scrap (bundles and solids) delivered to consumers in the Pittsburgh, PA, area, the average price increased by 32% to \$823 per metric ton from \$624 in 1999.

The unit value of total ferrous scrap exports (excluding used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) increased by about 30% to about \$174 per metric ton compared with that of 1999 (table 11). The unit value of total imports, about \$85 per ton, was about 18% less than that of 1999 (table 14).

Foreign Trade

Foreign trade valuation continued to be reported on a free-alongside-ship (f.a.s.) basis for exports and on a Customs value basis for imports. In 2000, the U.S. trade surplus for all classes of ferrous scrap (including used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) was 2.2 Mt valued at \$597 million (U.S. Census Bureau, unpub. data, 2000). This represented an increase of 42% in quantity and 82% in value compared with the 1999 surpluses of 1.5 Mt and \$328 million.

Total U.S. exports of carbon steel and cast-iron scrap (including reexports and excluding used rails for rerolling and other uses; ships, boats, and other vessels for scrapping; stainless steel; and alloy steel) went to 55 countries (1 less than during 1999) and totaled 4.5 Mt (a 4% decrease) valued at \$526 million (an 11% increase) for an average of \$116 per ton (U.S.

Census Bureau, unpub. data, 2000). The largest tonnages went to the Republic of Korea, 1.24 million; Canada, 1.04 million; Mexico, 792,000; China, 773,000; and Taiwan, 205,000. These countries received 90% of the total quantity valued at \$451 million, which was 86% of the total value.

Total U.S. exports of stainless steel scrap, including reexports, went to 43 countries (12 more than in 1999) and consisted of 470,000 t (an 80% increase) valued at \$311 million (a 105% increase) for an average of \$661 per metric ton (a 14% increase) (U.S. Census Bureau, unpub. data, 2000). The largest tonnages went to the Republic of Korea, 181,000; Taiwan, 80,000; Canada, 47,000; Japan, 46,000; and China, 24,000. These countries received 80% of the total quantity valued at \$248 million, which also was 80% of the total value.

U.S. exports of alloy steel scrap (including reexports and excluding stainless steel) were shipped to 46 countries (1 more than in 1999) and consisted of 815,000 t (a 46% increase) valued at \$169 million (a 47% increase) for an average of \$207 per metric ton (a 1% increase) (U.S. Census Bureau, unpub. data, 2000). The largest tonnages went to China, 295,000; Mexico, 214,000; and Canada, 202,000. These countries received 87% of the total quantity valued at \$138 million, which was 82% of the total value.

World Review

Iron and steel scrap is an important raw material for the steel and foundry industries. Because scrap comes from such sources as old buildings, industrial machinery, discarded cars and consumer durables, and manufacturing operations, the relatively mature industrialized economies are generally the main exporters of scrap to lesser developed steelmaking countries.

Germany was the leading exporting country of iron and steel scrap in 1999 (International Iron and Steel Institute, 2000, p. 102), followed by Russia, the United States, Ukraine, Japan, France, the United Kingdom, and Canada. The five most significant importing nations were, in decreasing order of importance, Turkey, the Republic of Korea, Spain, Italy, and the United States (International Iron and Steel Institute, 2000, p. 104).

Outlook

As 2000 opened, the longest economic expansion in U.S. history began its 105th month, and the economies of Asia, Europe, and Latin America were improving. The expectation was for continued strong domestic economic growth and strong demand for steel products and ferrous scrap. In October 2000, the International Iron and Steel Institute forecast an increase in world steel consumption of 5.8% during 2000 and 2.3% during 2001 for a total of 769 Mt in 2001 (International Iron and Steel Institute, [undated], Short and medium term outlook for steel demand, accessed June 5, 2000, at URL http://www.worldsteel.org/trends_indicators/demand.html). About 15% of the 1999-2000 increase is accounted for by estimates for China. It is predicted that China will soon be consuming more steel than either the European Union (EU) or the countries of the North American Free Trade Agreement. Even without the Chinese contribution to the total, world steel demand is forecast to grow by 35 Mt in 2000 and 7 Mt in 2001, and 43 Mt through 2005. Consumption will increase during 2001 in China, 7.3%; the Commonwealth of Independent States,

1.2%; the EU, 0.4%; and the Republic of Korea, 4.7%; while the United States and Japan may experience slight declines of less than 1% each. However, by the fourth quarter 2000, the U.S. economy began to soften, as did demand for steel and scrap. Prices for these commodities declined as inventories grew, putting the steel sector back into a depressed state similar to that experienced during the Asian financial crisis 3 years earlier. Imports of low-price steel and scrap again brought calls for relief from unfair dumping. Although the industry was hoping for relief on the imports issue, by yearend 2000 the realization was growing that the problem of excess U.S. uneconomic steelmaking capacity would need a solution.

The United States is the top consumer of ferrous scrap while holding the world's largest stockpile of ferrous scrap resources. The United States has had sufficient scrap resources to satisfy domestic steelmaking needs while being able to export significant scrap quantities to newly emerging economies with developing steelmaking capacities. Steelmaking by the EAF in the minimill will continue to grow in the United States because of its capital and operating cost advantages relative to those of the blast furnace and basic oxygen furnace, and it is environmentally cleaner (Darrell Hassler, November 11, 1998, Scrap trade pins hopes on minimills, accessed June 11, 1999, at URL <http://www.amm.com/ref/hot/feresc98a.htm#3>). In fact, the ratio of EAF steelmaking to BOF steel production has been forecast to increase to 60% from the current 47% (TexReport, 2001).

Continuing expansion of EAF mills in the eastern United States has been absorbing available local scrap resources, thereby causing east coast exports to Europe and Turkey to decline. Demand for scrap in the western United States has not been increasing at a similar pace to that in the eastern United States, and west coast scrap export is expected to increase to satisfy the emerging demand of China, which may displace the Republic of Korea as the largest overseas scrap market.

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GENERAL SOURCES OF INFORMATION

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Other

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TABLE 1
SALIENT U.S. IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON STATISTICS 1/

(Thousand metric tons, unless otherwise specified)

| | 1996 | 1997 | 1998 | 1999 | 2000 | |
|---|-----------|-------------|-------------|-----------|-----------|-------------|
| Manufacturers of pig iron and raw steel and castings: 2/ | | | | | | |
| Ferrous scrap consumption | 56,000 | 58,000 | 58,000 | 56,000 | 59,000 | |
| Pig iron consumption | 50,000 | 51,000 | 49,000 | 48,000 | 49,000 | |
| Direct-reduced iron consumption | 1,300 | 1,300 | 1,300 | 2,200 | 2,300 | |
| Net receipts of ferrous scrap 3/ | 41,000 | 43,000 | 44,000 | 42,000 | 45,000 | |
| Home scrap production 4/ | 15,000 | 14,000 | 14,000 | 13,000 | 14,000 | |
| Ending stocks of ferrous scrap, December 31 | 4,800 | 4,900 | 4,700 | 4,800 | 4,700 | |
| Manufacturers of steel castings: 5/ | | | | | | |
| Ferrous scrap consumption | 2,000 | 1,800 | 2,000 | 1,900 | 2,200 | |
| Pig iron consumption | 11 | 13 | 14 | 11 | 11 | |
| Net receipts of ferrous scrap 3/ | 1,300 | 1,200 | 1,300 | 1,200 | 1,200 | |
| Home scrap production 4/ | 640 | 660 | 710 | 690 | 980 | |
| Ending stocks of ferrous scrap, December 31 | 84 | 77 | 83 | 230 | 150 | |
| Iron foundries and miscellaneous users: 5/ | | | | | | |
| Ferrous scrap consumption | 13,000 | 13,000 | 13,000 | 13,000 | 13,000 | |
| Pig iron consumption | 1,100 | 1,200 | 1,200 | 1,100 | 1,200 | |
| Direct-reduced iron consumption | 13 | 13 | 12 | 13 | 16 | |
| Net receipts of ferrous scrap 3/ | 8,300 | 8,200 | 7,900 | 7,700 | 7,800 | |
| Home scrap production 4/ | 4,900 | 5,200 | 5,100 | 5,000 | 4,800 | |
| Ending stocks of ferrous scrap, December 31 | 360 | 470 | 440 | 430 | 430 | |
| Totals, all manufacturing types: | | | | | | |
| Ferrous scrap consumption | 71,000 | 73,000 | 73,000 | 71,000 | 74,000 | |
| Pig iron consumption | 52,000 | 52,000 | 50,000 | 49,000 | 50,000 | |
| Direct-reduced iron consumption | 1,300 | 1,300 | 1,300 | 2,200 | 2,300 | |
| Net receipts of ferrous scrap 3/ | 50,000 | 52,000 | 53,000 | 51,000 | 54,000 | |
| Home scrap production 4/ | 20,000 | 20,000 | 20,000 | 19,000 | 20,000 | |
| Ending stocks, December 31: | | | | | | |
| Ferrous scrap at consumer plants | 5,200 | 5,500 | 5,200 | 5,500 | 5,300 | |
| Pig iron at consumer and supplier plants | 600 | 510 | 560 | 720 | 800 | |
| Direct-reduced iron at consumer plants | 270 | 160 | 280 | 310 | 290 | |
| Exports: 6/ | | | | | | |
| Ferrous scrap (includes tinplate and terneplate) 7/ | 8,440 | 8,930 | 5,570 | 5,520 | 5,760 | |
| Value | thousands | \$1,340,000 | \$1,350,000 | \$805,000 | \$738,000 | \$1,000,000 |
| Pig iron (all grades) | 58 | 86 | 87 | 83 | 72 | |
| Value | thousands | \$8,320 | \$12,300 | \$11,700 | \$11,100 | \$9,620 |
| Direct-reduced iron (steelmaking grade) | 3 | 8 | 5 | 3 | 2 | |
| Value | thousands | \$304 | \$852 | \$487 | \$302 | \$241 |
| Imports for consumption: 6/ | | | | | | |
| Ferrous scrap (includes tinplate and terneplate) 7/ | 2,600 | 2,870 | 3,060 | 3,670 | 3,350 | |
| Value | thousands | \$342,000 | \$384,000 | \$402,000 | \$383,000 | \$385,000 |
| Pig iron (all grades) | 2,660 | 3,150 | 5,150 | 4,990 | 4,970 | |
| Value | thousands | \$411,000 | \$465,000 | \$722,000 | \$527,000 | \$601,000 |
| Direct-reduced iron (steelmaking grade) | 1,050 | 987 | 939 | 950 | 1,090 | |
| Value | thousands | \$136,000 | \$127,000 | \$118,000 | \$86,500 | \$119,000 |

1/ Data are rounded to no more than two significant digits, except trade data, which are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes manufacturers of raw steel that also produce steel castings.

3/ Net receipts of scrap is defined as receipts from brokers, dealers, and other outside sources, plus receipts from other own-company plants minus shipments.

4/ Home scrap production includes recirculating scrap that results from current operations and obsolete home scrap.

5/ Some consumers in the "Manufacturers of steel castings" category also produce iron castings; some consumers in the "Iron foundries and miscellaneous users" category also produce steel castings.

6/ Data from U.S. Census Bureau. Export valuation is free-alongside-ship (f.a.s.) value, and import valuation is Customs value.

7/ Excludes used rails for rerolling and other uses and ships, boats and other vessels for scrapping.

TABLE 2
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS
OF IRON AND STEEL SCRAP IN 2000, BY GRADE 1/

(Thousand metric tons)

| Grade | Receipts of scrap | | Production of home scrap | | Consumption of purchased and home scrap | Shipments of scrap | Ending stocks, December 31 |
|--|---|-------------------------------|---|-------------------|---|--------------------|----------------------------|
| | From brokers, dealers and other outside sources | From other own-company plants | Recirculating scrap from current operations | Obsolete scrap 2/ | | | |
| Manufacturers of pig iron and raw steel and castings: | | | | | | | |
| Carbon steel: | | | | | | | |
| Low-phosphorus plate and punchings | 330 | -- | (3/) | -- | 340 | 13 | 25 |
| Cut structural and plate | 3,800 | 54 | 700 | 51 | 4,400 | 66 | 270 |
| No. 1 heavy melting steel | 5,400 | 330 | 3,900 | 24 | 9,800 | 79 | 670 |
| No. 2 heavy melting steel | 5,700 | 76 | 530 | 1 | 6,200 | 86 | 490 |
| No. 1 and electric furnace bundles | 5,700 | 310 | 1,700 | (3/) | 7,200 | 490 | 320 |
| No. 2 and all other bundles | 1,000 | 15 | 2 | (3/) | 1,000 | -- | 58 |
| Electric furnace, 1 foot and under (not bundles) | -- | 9 | 180 | -- | 86 | 110 | 2 |
| Railroad rails | 200 | 2 | 42 | -- | 230 | 10 | 10 |
| Turnings and borings | 2,100 | 72 | 70 | (3/) | 2,200 | (3/) | 130 |
| Slag scrap | 790 | 130 | 1,300 | 17 | 2,100 | 210 | 180 |
| Shredded or fragmentized | 9,200 | 970 | 370 | -- | 11,000 | 30 | 570 |
| No. 1 busheling | 5,400 | 130 | 120 | -- | 5,400 | 140 | 350 |
| Steel cans (post consumer) | 190 | 7 | 40 | -- | 250 | -- | 74 |
| All other carbon steel scrap | 2,300 | 67 | 2,500 | 4 | 4,400 | 380 | 390 |
| Stainless steel scrap | 820 | 1 | 400 | -- | 1,200 | 1 | 46 |
| Alloy steel (except stainless) | 280 | 8 | 560 | -- | 780 | 25 | 75 |
| Ingot mold and stool scrap | 10 | -- | 120 | 100 | 100 | 130 | 21 |
| Machinery and cupola cast iron | 75 | -- | 5 | -- | 73 | 1 | 10 |
| Cast-iron borings | 260 | -- | (3/) | -- | 250 | 13 | 12 |
| Motor blocks | 11 | -- | -- | -- | 11 | -- | 1 |
| Other iron scrap | 300 | 55 | 460 | -- | 770 | 150 | 370 |
| Other mixed scrap | 1,000 | 22 | 530 | (3/) | 1,400 | 89 | 650 |
| Total | 45,000 | 2,300 | 14,000 | 200 | 59,000 | 2,000 | 4,700 |
| Manufacturers of steel castings: | | | | | | | |
| Carbon steel: | | | | | | | |
| Low-phosphorus plate and punchings | 370 | 3 | 83 | (3/) | 470 | (3/) | 31 |
| Cut structural and plate | 180 | -- | 10 | 10 | 190 | 10 | 23 |
| No. 1 heavy melting steel | 70 | -- | 37 | -- | 110 | -- | 8 |
| No. 2 heavy melting steel | 15 | -- | -- | -- | 12 | -- | 2 |
| No. 1 and electric furnace bundles | 11 | -- | -- | -- | 13 | -- | (3/) |
| No. 2 and all other bundles | -- | -- | -- | -- | -- | -- | -- |
| Electric furnace, 1 foot and under (not bundles) | 10 | 5 | 4 | -- | 18 | -- | 3 |
| Railroad rails | 28 | -- | 58 | -- | 86 | (3/) | 2 |
| Turnings and borings | 46 | 1 | 6 | 18 | 53 | 18 | 1 |
| Slag scrap | 1 | -- | 3 | -- | 4 | -- | (3/) |
| Shredded or fragmentized | 120 | -- | -- | -- | 120 | -- | 2 |
| No. 1 busheling | 90 | -- | 6 | -- | 99 | -- | 6 |
| Steel cans (post consumer) | -- | -- | -- | -- | -- | -- | -- |
| All other carbon steel scrap | 83 | 2 | 230 | 9 | 310 | 15 | 11 |
| Stainless steel scrap | 140 | (3/) | 300 | 28 | 450 | 29 | 36 |
| Alloy steel (except stainless) | 72 | 1 | 50 | (3/) | 120 | (3/) | 8 |
| Ingot mold and stool scrap | 10 | -- | 43 | -- | 33 | 19 | 6 |
| Machinery and cupola cast iron | -- | -- | -- | -- | -- | -- | (3/) |
| Cast-iron borings | -- | -- | 1 | -- | 1 | -- | (3/) |
| Motor blocks | 1 | -- | -- | -- | 1 | -- | (3/) |
| Other iron scrap | 9 | -- | 60 | -- | 69 | 1 | 2 |
| Other mixed scrap | 52 | -- | 1 | 14 | 65 | 1 | 5 |
| Total | 1,300 | 11 | 900 | 79 | 2,200 | 92 | 150 |

See footnotes at end of table.

TABLE 2--Continued
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS
OF IRON AND STEEL SCRAP IN 2000, BY GRADE 1/

(Thousand metric tons)

| Grade | Receipts of scrap | | Production of home scrap | | Consumption of purchased and home scrap | Shipments of scrap | Ending stocks, December 31 |
|--|--|---|--|----------------------|---|-----------------------|----------------------------------|
| | From brokers, dealers and other outside sources | From other own- company plants | Recirculating scrap from current operations | Obsolete scrap 2/ | | | |
| Iron foundries and miscellaneous users: | | | | | | | |
| Carbon steel: | | | | | | | |
| Low-phosphorus plate and punchings | | 5 | 160 | (3/) | 1,100 | (3/) | 18 |
| Cut structural and plate | 1,300 | 32 | 110 | (3/) | 1,500 | (3/) | 120 |
| No. 1 heavy melting steel | 220 | 3 | 16 | (3/) | 230 | 2 | 9 |
| No. 2 heavy melting steel | 150 | 1 | -- | -- | 160 | -- | 3 |
| No. 1 and electric furnace bundles | 93 | 140 | 32 | -- | 260 | -- | 12 |
| No. 2 and all other bundles | 88 | -- | 1 | -- | 88 | 1 | 2 |
| Electric furnace, 1 foot and under (not bundles) | 140 | -- | 1 | -- | 140 | 1 | 3 |
| Railroad rails | 140 | -- | 9 | -- | 150 | -- | 6 |
| Turnings and borings | 87 | 65 | 3 | -- | 160 | 4 | 3 |
| Slag scrap | 42 | -- | 3 | -- | 40 | 3 | 4 |
| Shredded or fragmentized | 1,500 | 110 | (3/) | -- | 1,700 | -- | 55 |
| No. 1 busheling | 670 | 62 | 56 | -- | 780 | 39 | 17 |
| Steel cans (post consumer) | 14 | -- | -- | -- | 14 | -- | (3/) |
| All other carbon steel scrap | 120 | (3/) | 42 | -- | 170 | (3/) | 12 |
| Stainless steel scrap | 6 | -- | 4 | -- | 9 | (3/) | 6 |
| Alloy steel (except stainless) | 13 | -- | 1 | -- | 14 | -- | 2 |
| Ingot mold and stool scrap | 61 | -- | 2 | (3/) | 63 | -- | 10 |
| Machinery and cupola cast iron | 740 | -- | 310 | (3/) | 1,100 | 1 | 56 |
| Cast-iron borings | 190 | 89 | 47 | 1 | 320 | 8 | 5 |
| Motor blocks | 240 | 10 | 740 | -- | 1,000 | 2 | 9 |
| Other iron scrap | 240 | 3 | 3,100 | -- | 3,300 | 9 | 67 |
| Other mixed scrap | 210 | 23 | 150 | (3/) | 380 | (3/) | 14 |
| Total | 7,300 | 540 | 4,800 | 2 | 13,000 | 71 | 430 |
| Totals for all manufacturing types: | | | | | | | |
| Carbon steel: | | | | | | | |
| Low-phosphorus plate and punchings | 1,600 | 8 | 240 | (3/) | 1,900 | 14 | 75 |
| Cut structural and plate | 5,400 | 86 | 810 | 61 | 6,100 | 76 | 420 |
| No. 1 heavy melting steel | 5,700 | 340 | 4,000 | 24 | 10,000 | 81 | 680 |
| No. 2 heavy melting steel | 5,800 | 77 | 530 | 1 | 6,400 | 86 | 490 |
| No. 1 and electric furnace bundles | 5,800 | 440 | 1,700 | (3/) | 7,500 | 490 | 330 |
| No. 2 and all other bundles | 1,100 | 15 | 3 | (3/) | 1,100 | 1 | 60 |
| Electric furnace, 1 foot and under (not bundles) | 150 | 14 | 180 | -- | 250 | 110 | 7 |
| Railroad rails | 370 | 2 | 110 | -- | 470 | 10 | 19 |
| Turnings and borings | 2,200 | 140 | 79 | 18 | 2,400 | 22 | 130 |
| Slag scrap | 830 | 130 | 1,300 | 17 | 2,200 | 210 | 180 |
| Shredded or fragmentized | 11,000 | 1,100 | 370 | -- | 12,000 | 30 | 630 |
| No. 1 busheling | 6,200 | 200 | 190 | -- | 6,300 | 180 | 370 |
| Steel cans (post consumer) | 200 | 7 | 40 | -- | 260 | -- | 74 |
| All other carbon steel scrap | 2,500 | 69 | 2,800 | 13 | 4,900 | 390 | 410 |
| Stainless steel scrap | 960 | 1 | 700 | 28 | 1,700 | 30 | 88 |
| Alloy steel (except stainless) | 360 | 8 | 610 | (3/) | 920 | 25 | 85 |
| Ingot mold and stool scrap | 81 | -- | 170 | 100 | 200 | 150 | 37 |
| Machinery and cupola cast iron | 810 | -- | 320 | (3/) | 1,100 | 3 | 66 |
| Cast-iron borings | 450 | 89 | 47 | 1 | 570 | 22 | 17 |
| Motor blocks | 260 | 10 | 740 | -- | 1,000 | 2 | 10 |
| Other iron scrap | 550 | 58 | 3,600 | -- | 4,200 | 160 | 440 |
| Other mixed scrap | 1,300 | 45 | 680 | 14 | 1,900 | 90 | 670 |
| Total | 53,000 | 2,800 | 19,000 | 280 | 74,000 | 2,200 | 5,300 |

-- Zero.

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Obsolete home scrap includes ingot molds, stools, and scrap from old equipment, buildings, etc.

3/ Less than 1/2 unit.

TABLE 3
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS
OF PIG IRON AND DIRECT-REDUCED IRON (DRI) IN 2000 1/

(Thousand metric tons)

| | Receipts | Production | Consumption | Shipments | Stocks, December 31 |
|---|-----------|------------|-------------|-----------|------------------------|
| Manufacturers of pig iron, raw steel, castings: | | | | | |
| Pig iron | 10,000 2/ | 42,000 | 49,000 | 1,900 | 660 |
| DRI | 2,200 3/ | W | 2,300 | 17 | 290 |
| Manufacturers of steel castings: | | | | | |
| Pig iron | 11 | (4/) | 11 | (5/) | 1 |
| DRI | -- | -- | -- | -- | -- |
| Iron foundries and miscellaneous users: | | | | | |
| Pig iron | 1,200 | (4/) | 1,200 | 41 | 130 |
| DRI | 16 | 1 | 16 | -- | (5/) |
| Totals for all manufacturing types: | | | | | |
| Pig iron | 11,000 | 42,000 | 50,000 | 1,900 | 800 |
| DRI | 2,200 | W | 2,300 | 17 | 290 |

W Withheld to avoid disclosing company proprietary data. -- Zero.

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Includes 1,600 tons purchased by electric furnace steel producers.

3/ Includes 1,300 tons purchased by integrated steel producers.

4/ Withheld to avoid disclosing company proprietary data; included in "Total."

5/ Less than 1/2 unit.

TABLE 4
U.S. CONSUMPTION OF IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON (DRI) IN 2000,
BY TYPE OF FURNACE OR OTHER USE 1/

(Thousand metric tons)

| | Manufacturers of pig iron, raw steel, castings | | | Manufacturers of steel castings | | | Iron foundries and miscellaneous users | | | Totals for all manufacturing types | | |
|-----------------------------------|---|-------------|-------|------------------------------------|-------------|-----|---|-------------|-----|---------------------------------------|-------------|-------|
| | Scrap | Pig iron | DRI | Scrap | Pig iron | DRI | Scrap | Pig iron | DRI | Scrap | Pig iron | DRI |
| Blast furnace | 1,500 | -- | 330 | -- | -- | -- | -- | -- | -- | 1,500 | -- | 330 |
| Basic oxygen process | 15,000 | 47,000 | 100 | -- | -- | -- | -- | -- | -- | 15,000 | 47,000 | 100 |
| Electric furnace | 43,000 | 2,200 | 1,800 | 2,100 | 11 | -- | 5,300 | 700 | 5 | 50,000 | 2,900 | 1,800 |
| Cupola furnace | -- | -- | -- | 100 | 1 | -- | 7,300 | 520 | 11 | 7,400 | 530 | 11 |
| Other (including air furnaces) | W | -- | -- | 2 | -- | -- | W | W | -- | 2 | W | -- |
| Direct castings 2/ | -- | 35 | -- | -- | -- | -- | -- | -- | -- | -- | 35 | -- |
| Total | 59,000 | 49,000 | 2,300 | 2,200 | 11 | -- | 13,000 | 1,200 | 16 | 74,000 | 50,000 | 2,300 |

W Withheld to avoid disclosing company proprietary data; included with "Electric furnace." -- Zero.

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Includes ingot molds and stools.

TABLE 5
IRON AND STEEL SCRAP SUPPLY AVAILABLE FOR CONSUMPTION IN 2000, BY REGION AND STATE 1/ 2/

(Thousand metric tons)

| Region and State | Receipts of scrap | | Production of home scrap | | Shipments of scrap 4/ | New supply available for consumption |
|---|--|-------------------------------|---|-------------------|-----------------------|--------------------------------------|
| | From brokers, dealers, other outside sources | From other own company plants | Recirculating scrap resulting from current operations | Obsolete scrap 3/ | | |
| New England and Middle Atlantic: | | | | | | |
| Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont | 47 | -- | 30 | 1 | (5/) | 76 |
| New Jersey and New York | 1,800 | -- | 110 | 7 | 1 | 1,900 |
| Pennsylvania | 4,200 | 98 | 2,400 | 77 | 18 | 6,800 |
| Total | 6,100 | 98 | 2,600 | 85 | 20 | 8,800 |
| North Central: | | | | | | |
| Illinois | 3,400 | 86 | 1,000 | 2 | 170 | 4,300 |
| Indiana | 4,200 | 190 | 5,100 | 39 | 620 | 8,900 |
| Iowa, Nebraska, South Dakota | 1,900 | 3 | 210 | -- | (5/) | 2,200 |
| Kansas and Missouri | 830 | 3 | 250 | 65 | 83 | 1,100 |
| Michigan | 3,200 | 440 | 1,900 | (5/) | 200 | 5,300 |
| Minnesota | 450 | 170 | 110 | -- | (6/) | 730 |
| Ohio | 7,400 | 800 | 2,300 | 43 | 780 | 9,800 |
| Wisconsin | 1,200 | 3 | 1,000 | (5/) | 6 | 2,200 |
| Total | 23,000 | 1,700 | 12,000 | 150 | 1,900 | 34,000 |
| South Atlantic: | | | | | | |
| Delaware and Maryland | 680 | 1 | 430 | -- | (6/) | 1,100 |
| Florida and Georgia | 950 | -- | 160 | -- | (5/) | 1,100 |
| North Carolina and South Carolina | 2,100 | (6/) | 230 | -- | (6/) | 2,300 |
| Virginia and West Virginia | 1,800 | (6/) | 600 | (6/) | (6/) | 2,500 |
| Total | 5,500 | 160 | 1,400 | (6/) | 160 | 7,000 |
| South Central: | | | | | | |
| Alabama and Mississippi | 3,700 | (6/) | 1,000 | (6/) | 83 | 4,700 |
| Arkansas, Louisiana, Oklahoma | 4,300 | (6/) | 380 | (6/) | (6/) | 4,700 |
| Kentucky and Tennessee | 3,200 | 2 | 510 | -- | (6/) | 3,600 |
| Texas | 3,300 | 760 | 610 | 10 | 4 | 4,700 |
| Total | 14,000 | 860 | 2,500 | 24 | 140 | 18,000 |
| Mountain and Pacific: | | | | | | |
| Arizona, Colorado, Idaho, Montana, Utah | 2,200 | (5/) | 550 | (6/) | (6/) | 2,800 |
| California, Oregon, Washington | 2,600 | W | 310 | (5/) | (6/) | 2,900 |
| Total | 4,800 | W | 850 | (6/) | 5 | 5,700 |
| Grand total | 53,000 | 2,800 | 19,000 | 280 | 2,200 | 74,000 |

W Withheld to avoid disclosing company proprietary data. -- Zero.

1/ Supply available for consumption is a net figure computed by adding production to receipts and deducting scrap shipped during the year. The difference in stock levels at the beginning and end of the year is not taken into consideration.

2/ Data are rounded to no more than two significant digits; may not add to totals shown.

3/ Obsolete scrap includes ingot molds, stools and scrap from old equipment, buildings, etc.

4/ Includes scrap shipped, transferred, or otherwise disposed of during the year.

5/ Less than 1/2 unit.

6/ Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total."

TABLE 6
U.S. CONSUMPTION OF IRON AND STEEL SCRAP AND PIG IRON IN 2000, BY REGION AND STATE 1/ 2/ 3/

(Thousand metric tons)

| Region and State | Manufacturers of pig iron, raw steel, castings | | Manufacturers of steel castings | | Iron foundries and miscellaneous users | | Totals for all manufacturing types | |
|---|--|----------|------------------------------------|----------|---|----------|--|----------|
| | Scrap | Pig iron | Scrap | Pig iron | Scrap | Pig iron | Scrap | Pig iron |
| New England and Middle Atlantic: | | | | | | | | |
| Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont | 1,600 | 24 | 20 | (4/) | 390 | 17 | 2,000 | 41 |
| Pennsylvania | 6,300 | 3,000 | 180 | 2 | 580 | 79 | 7,100 | 3,100 |
| Total | 7,900 | 3,000 | 200 | 2 | 980 | 96 | 9,100 | 3,100 |
| North Central: | | | | | | | | |
| Illinois | 3,800 | 2,700 | 140 | 2 | 570 | 36 | 4,500 | 2,800 |
| Indiana | 8,000 | 17,000 | 69 | 1 | 1,100 | 150 | 9,200 | 17,000 |
| Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, Wisconsin | 3,000 | 110 | 480 | 3 | 2,400 | 320 | 5,900 | 430 |
| Michigan | 2,700 | 5,000 | 31 | (4/) | 2,500 | 170 | 5,200 | 5,200 |
| Ohio | 7,800 | 9,800 | 430 | 2 | 1,300 | 130 | 9,500 | 9,900 |
| Total | 25,000 | 34,000 | 1,200 | 8 | 7,800 | 810 | 34,000 | 35,000 |
| South Atlantic: | | | | | | | | |
| Delaware, Maryland, Virginia, West Virginia | 2,900 | W | W | W | 470 | 21 | 3,400 | 4,400 |
| Florida, Georgia, North Carolina, South Carolina | 2,900 | W | W | W | 480 | 37 | 3,400 | 75 |
| Total | 5,900 | 4,400 | 4 | W | 960 | 58 | 6,800 | 4,500 |
| South Central: | | | | | | | | |
| Alabama, Kentucky, Mississippi, Tennessee | 5,800 | W | 620 | W | 1,900 | W | 8,300 | 5,000 |
| Arkansas, Louisiana, Oklahoma | 4,700 | W | 25 | W | 120 | W | 4,800 | 600 |
| Texas | 4,200 | 62 | 89 | W | 420 | 38 | 4,700 | 100 |
| Total | 15,000 | 5,500 | 730 | W | 2,400 | 200 | 18,000 | 5,700 |
| Mountain and Pacific: | | | | | | | | |
| Arizona, Colorado, Idaho, Montana, Utah | 2,700 | W | 22 | (4/) | 130 | W | 2,900 | 1,900 |
| California, Oregon, Washington | 2,400 | W | 120 | (4/) | 320 | W | 2,900 | 110 |
| Total | 5,200 | 1,900 | 140 | (4/) | 460 | 58 | 5,800 | 2,000 |
| Grand total | 59,000 | 49,000 | 2,200 | 11 | 13,000 | 1,200 | 74,000 | 50,000 |

W Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total."

1/ Includes recirculating scrap resulting from current operations and home-generated obsolete scrap.

2/ Includes molten pig iron used for ingot molds and direct castings.

3/ Data are rounded to no more than two significant digits; may not add to totals shown.

4/ Less than 1/2 unit.

TABLE 7
U.S. CONSUMER STOCKS OF IRON AND STEEL SCRAP AND PIG IRON, DECEMBER 31, 2000, BY REGION AND STATE 1/

(Thousand metric tons)

| Region and State | Carbon steel 2/ | Stainless steel | Alloy steel 3/ | Cast iron 4/ | Other grades of scrap | Total scrap | Pig iron |
|---|-----------------|-----------------|----------------|--------------|-----------------------|-------------|----------|
| New England and Middle Atlantic: | | | | | | | |
| Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont | (5/) | 1 | (5/) | 1 | W | 1 | 1 |
| New Jersey and New York | 71 | 1 | 1 | 1 | W | 76 | 1 |
| Pennsylvania | 340 | 33 | 20 | 28 | 5 | 420 | 29 |
| Total | 410 | 35 | 21 | 30 | 5 | 500 | 31 |
| North Central: | | | | | | | |
| Illinois | 320 | (5/) | W | 18 | 3 | 340 | 35 |
| Indiana | 500 | 5 | W | 120 | 13 | 640 | 210 |
| Iowa, Kansas, Missouri, Nebraska, South Dakota | 170 | (5/) | 1 | 14 | W | 180 | 99 |
| Michigan | 130 | 6 | 1 | 18 | 45 | 200 | 70 |
| Minnesota and Wisconsin | 41 | 2 | 1 | 9 | 2 | 54 | 9 |
| Ohio | 440 | 27 | 45 | 33 | 4 | 550 | 33 |
| Total | 1,600 | 40 | 49 | 210 | 68 | 2,000 | 460 |
| South Atlantic: | | | | | | | |
| Delaware, Maryland, Virginia, West Virginia | 270 | (5/) | W | 17 | 46 | 330 | 57 |
| Florida, Georgia, North Carolina, South Carolina | 120 | (5/) | W | 23 | 3 | 150 | 7 |
| Total | 390 | (5/) | 3 | 40 | 49 | 480 | 64 |
| South Central: | | | | | | | |
| Alabama, Kentucky, Mississippi, Tennessee | 650 | W | W | 260 | W | 1,400 | 140 |
| Arkansas, Louisiana, Oklahoma | 360 | W | W | 4 | W | 370 | 68 |
| Texas | 250 | W | W | 4 | W | 260 | 21 |
| Total | 1,300 | 12 | 6 | 270 | 500 | 2,000 | 220 |
| Mountain and Pacific: | | | | | | | |
| Arizona, Colorado, Idaho, Montana, Utah | 140 | (5/) | W | 6 | -- | 150 | W |
| California, Oregon, Washington | 93 | (5/) | W | 16 | 53 | 170 | W |
| Total | 230 | 1 | 5 | 22 | 53 | 310 | 17 |
| Grand total | 3,900 | 88 | 84 | 570 | 670 | 5,300 | 800 |

W Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total." -- Zero.

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Excludes rerolling rails.

3/ Excludes stainless steel.

4/ Includes borings.

5/ Less than 1/2 unit.

TABLE 8
U.S. AVERAGE MONTHLY PRICE AND COMPOSITE PRICE FOR NO. 1 HEAVY MELTING STEEL, WITH ANNUAL AVERAGES 1/

(Dollars per metric ton)

| Period | Chicago | Philadelphia | Pittsburgh | Composite price |
|------------------------|---------|--------------|------------|-----------------|
| 2000: | | | | |
| January | 118.60 | 115.10 | 126.47 | 120.06 |
| February | 109.35 | 101.52 | 117.12 | 109.33 |
| March | 108.75 | 101.37 | 116.63 | 108.92 |
| April | 106.44 | 103.83 | 116.23 | 108.84 |
| May | 99.90 | 97.44 | 108.75 | 102.03 |
| June | 93.10 | 92.52 | 102.85 | 96.15 |
| July | 91.04 | 87.59 | 97.93 | 92.19 |
| August | 91.04 | 82.80 | 97.93 | 90.59 |
| September | 91.04 | 82.67 | 97.93 | 90.55 |
| October | 81.29 | 74.31 | 88.18 | 81.26 |
| November | 71.65 | 71.85 | 76.57 | 73.36 |
| December | 73.03 | 80.26 | 78.79 | 77.36 |
| Annual average: | | | | |
| 2000 | 94.60 | 90.94 | 102.11 | 95.88 |
| 1999 | 100.91 | 85.16 | 96.37 | 94.15 |

1/ Calculated by the U.S. Geological Survey from prices published in American Metal Market.

TABLE 9
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY COUNTRY 1/ 2/

(Thousand metric tons and thousand dollars)

| Country | 1999 | | 2000 | |
|--------------------|----------|----------|----------|-----------|
| | Quantity | Value | Quantity | Value |
| Australia | (3/) | 355 | 1 | 469 |
| Belgium | 3 | 1,770 | 16 | 11,200 |
| Brazil | 3 | 505 | 2 | 1,680 |
| Canada | 1,700 | 182,000 | 1,280 | 159,000 |
| China | 419 | 96,200 | 1,080 | 216,000 |
| Colombia | 30 | 3,380 | 5 | 690 |
| France | 15 | 2,450 | 1 | 322 |
| Germany | 9 | 2,610 | 5 | 2,090 |
| Hong Kong | 48 | 13,600 | 45 | 13,800 |
| India | 17 | 5,770 | 61 | 18,100 |
| Indonesia | 6 | 1,590 | 10 | 2,590 |
| Israel | 1 | 1,130 | 3 | 1,230 |
| Italy | 5 | 2,080 | 7 | 3,350 |
| Japan | 72 | 15,400 | 73 | 47,100 |
| Korea, Republic of | 1,870 | 215,000 | 1,440 | 142,000 |
| Malaysia | 46 | 4,360 | 95 | 9,450 |
| Mexico | 849 | 88,100 | 1,010 | 109,000 |
| Netherlands | 3 | 1,730 | 16 | 11,100 |
| Philippines | 17 | 8,290 | 18 | 10,500 |
| Saudi Arabia | (3/) | 27 | 33 | 2,960 |
| Singapore | 2 | 803 | 3 | 2,300 |
| South Africa | 16 | 10,100 | 13 | 9,110 |
| Spain | 32 | 16,700 | 81 | 118,000 |
| Sweden | 1 | 672 | 5 | 148 |
| Taiwan | 220 | 44,100 | 297 | 82,600 |
| Thailand | 58 | 6,930 | 134 | 16,000 |
| United Kingdom | 13 | 4,760 | 8 | 3,220 |
| Other | 64 r/ | 8,760 r/ | 23 | 8,090 |
| Total | 5,520 | 738,000 | 5,760 | 1,000,000 |

r/ Revised.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Export valuation is free-alongside-ship (f.a.s.) value. The United States exported scrap to 70 countries in 1999 and 88 countries in 2000.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 10
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY CUSTOMS DISTRICT 1/ 2/

(Thousand metric tons and thousand dollars)

| Customs district | 1999 | | 2000 | |
|-----------------------|----------|------------|----------|-----------|
| | Quantity | Value | Quantity | Value |
| Boston, MA | 328 | 30,500 | 336 | 32,500 |
| Buffalo, NY | 148 | 27,300 | 129 | 30,800 |
| Columbia-Snake | 52 | 10,300 | 105 | 22,700 |
| Detroit, MI | 411 | 46,900 | 220 | 35,000 |
| Honolulu, HI | 45 | 5,250 | 96 | 12,800 |
| Houston-Galveston, TX | 66 | 28,500 | 73 | 49,200 |
| Laredo, TX | 193 | 21,800 | 361 | 41,100 |
| Los Angeles, CA | 1,120 | 155,000 | 1,230 | 231,000 |
| Mobile, AL | 40 | 22,300 | 39 | 26,400 |
| New Orleans, LA | 50 | 13,900 | 47 | 34,700 |
| New York, NY | 379 | 64,200 | 357 | 109,000 |
| Nogales, AZ | 9 | 948 | 47 | 5,580 |
| Norfolk, VA | 118 | 15,700 | 84 | 20,700 |
| Pembina, ND | 361 | 32,600 | 272 | 26,900 |
| Portland, ME | 79 | 8,010 | 69 | 7,640 |
| Providence, RI | 140 | 10,700 | 240 | 24,500 |
| San Francisco, CA | 706 | 90,600 | 847 | 125,000 |
| San Juan, PR | 11 | 5,430 | 69 | 4,830 |
| Seattle, WA | 277 | 40,300 | 303 | 53,100 |
| St Albans, VT | 38 | 7,860 | 66 | 12,200 |
| Tampa, FL | 2 | 415 | 64 | 6,990 |
| Other | 947 r/ | 100,000 r/ | 711 | 88,000 |
| Total | 5,520 | 738,000 | 5,760 | 1,000,000 |

r/ Revised.

1/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

Export valuation is free-alongside-ship (f.a.s.) value.

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 11
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY GRADE 1/ 2/

(Thousand metric tons and thousand dollars)

| Grade | 1999 | | 2000 | |
|--|----------|---------|----------|-----------|
| | Quantity | Value | Quantity | Value |
| No. 1 heavy melting scrap | 931 | 77,200 | 778 | 77,200 |
| No. 2 heavy melting scrap | 245 | 19,300 | 181 | 17,400 |
| No. 1 bundles | 42 | 3,800 | 52 | 5,120 |
| No. 2 bundles | 32 | 2,180 | 31 | 2,800 |
| Shredded steel scrap | 1,190 | 112,000 | 1,350 | 140,000 |
| Borings, shovelings and turnings | 230 | 15,600 | 214 | 15,700 |
| Cut plate and structural | 284 | 29,000 | 156 | 17,200 |
| Tinned iron or steel | 90 | 21,500 | 123 | 28,600 |
| Remelting scrap ingots | 2 | 664 | 3 | 1,600 |
| Stainless steel scrap | 260 | 151,000 | 468 | 310,000 |
| Other alloy steel scrap | 558 | 115,000 | 809 | 168,000 |
| Other steel scrap 3/ | 940 | 101,000 | 939 | 132,000 |
| Iron scrap | 715 | 89,300 | 658 | 85,000 |
| Total | 5,520 | 738,000 | 5,760 | 1,000,000 |
| Ships, boats, other vessels for scrapping | 7 | 2,610 | 11 | 153 |
| Used rails for rerolling and other uses 4/ | 34 | 14,300 | 40 | 15,600 |
| Grand total | 5,560 | 755,000 | 5,810 | 1,020,000 |

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Export valuation is on a free-alongside-ship (f.a.s.) value.

3/ Includes tinplate and terneplate.

4/ Includes mixed (used plus new) rails. See table 15 for details.

Source: U.S. Census Bureau.

TABLE 12
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY COUNTRY 1/ 2/

(Thousand metric tons and thousand dollars)

| Country | 1999 | | 2000 | |
|----------------------|----------|----------|----------|---------|
| | Quantity | Value | Quantity | Value |
| Australia | 19 | 1,900 | (3/) | 216 |
| Belgium | 30 | 3,270 | 53 | 10,200 |
| Brazil | 12 | 609 | 3 | 2,850 |
| Canada | 1,830 | 181,000 | 1,870 | 196,000 |
| China | 3 | 1,870 | (3/) | 54 |
| Dominican Republic | 32 | 3,090 | 32 | 3,630 |
| Egypt | 2 | 1,970 | 2 | 1,480 |
| Finland | 106 | 9,170 | 32 | 3,500 |
| France | (3/) | 73 | 1 | 173 |
| Germany | (3/) | 360 | 31 | 4,010 |
| Jamaica | 7 | 638 | 6 | 686 |
| Japan | 26 | 3,740 | 140 | 8,920 |
| Mexico | 62 | 26,600 | 63 | 29,200 |
| Netherlands | 218 | 21,000 | 129 | 13,800 |
| Netherlands Antilles | 4 | 355 | 4 | 440 |
| Norway | -- | -- | 15 | 1,420 |
| Panama | 2 | 107 | 1 | 168 |
| Russia | 98 | 6,840 | 91 | 8,920 |
| Singapore | 2 | 24 | 8 | 2,800 |
| South Africa | 6 | 2,000 | (3/) | 2 |
| Sweden | 175 | 16,100 | 200 | 21,000 |
| Trinidad and Tobago | (3/) | 45 | (3/) | 210 |
| Ukraine | (3/) | 14 | (3/) | 13 |
| United Kingdom | 976 | 95,600 | 652 | 71,300 |
| Venezuela | 4 | 523 | 8 | 1,920 |
| Other | 58 r/ | 5,780 r/ | 12 | 2,260 |
| Total | 3,670 | 383,000 | 3,350 | 385,000 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

Import valuation is Customs value. The United States imported scrap from 52 countries in 2000 and 53 countries in 1999.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 13
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP,
BY CUSTOMS DISTRICT 1/ 2/

(Thousand metric tons and thousand dollars)

| Customs district | 1999 | | 2000 | |
|------------------|----------|---------|----------|---------|
| | Quantity | Value | Quantity | Value |
| Buffalo, NY | 187 | 28,800 | 151 | 23,900 |
| Charleston, SC | 75 | 6,990 | 245 | 25,600 |
| Chicago, IL | 145 | 11,200 | 79 | 5,170 |
| Cleveland, OH | 28 | 1,790 | 38 | 3,580 |
| Detroit, MI | 1,110 | 107,000 | 1,110 | 113,000 |
| El Paso, TX | 6 | 2,020 | 7 | 2,090 |
| Laredo, TX | 44 | 17,500 | 59 | 24,300 |
| Los Angeles, CA | 6 | 327 | 59 | 798 |
| Mobile, AL | 52 | 5,210 | 21 | 2,670 |
| New Orleans, LA | 1,670 | 159,000 | 1,150 | 128,000 |
| Ogdensburg, NY | 19 | 3,710 | 31 | 5,110 |
| Pembina, ND | 25 | 7,610 | 21 | 5,970 |
| Philadelphia, PA | (3/) | 59 | 27 | 3,610 |
| San Diego, CA | 12 | 5,530 | 8 | 5,220 |
| Seattle, WA | 264 | 20,400 | 338 | 26,700 |
| Other | 32 | 6,800 | 18 | 8,420 |
| Total | 3,670 | 383,000 | 3,350 | 385,000 |

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Import valuation is Customs value.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 14
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY CLASS 1/ 2/

(Thousand metric tons and thousand dollars)

| Class | 1999 | | 2000 | |
|--|----------|---------|----------|---------|
| | Quantity | Value | Quantity | Value |
| No. 1 heavy melting scrap | 46 | 3,660 | 23 | 2,020 |
| No. 2 heavy melting scrap | 16 | 1,480 | 5 | 417 |
| No. 1 bundles | 246 | 23,100 | 248 | 25,000 |
| No. 2 bundles | 1 | 74 | 35 | 4,140 |
| Shredded steel scrap | 1,080 | 103,000 | 885 | 92,100 |
| Borings, shovelings and turnings | 138 | 10,800 | 76 | 5,640 |
| Cut plate and structural | 134 | 13,200 | 113 | 13,300 |
| Tinned iron or steel | 58 | 5,270 | 15 | 1,660 |
| Remelting scrap ingots | 5 | 1,860 | 34 | 5,590 |
| Stainless steel scrap | 66 | 27,700 | 56 | 35,500 |
| Other alloy steel scrap | 210 | 29,700 | 377 | 44,900 |
| Other steel scrap 3/ | 1,320 | 135,000 | 1,020 | 119,000 |
| Iron scrap | 354 | 28,300 | 466 | 35,300 |
| Total | 3,670 | 383,000 | 3,350 | 385,000 |
| Ships, boats, other vessels for scrapping | (4/) | 189 | -- | -- |
| Used rails for rerolling and other uses 5/ | 348 | 43,900 | 271 | 34,100 |
| Grand total | 4,020 | 427,000 | 3,630 | 419,000 |

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Import valuation is Customs value.

3/ Includes tinplate and terneplate.

4/ Less than 1/2 unit.

5/ Includes mixed (used plus new) rails. See table 16 for details.

Source: U.S. Census Bureau.

TABLE 15
U.S. EXPORTS OF USED RAILS FOR REROLLING AND OTHER USES, BY COUNTRY 1/ 2/

| Country | 1999 | | 2000 | |
|--------------------|---------------------------|----------------------|---------------------------|----------------------|
| | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) |
| Bahamas, The | 21 | \$90 | 405 | \$360 |
| Canada | 9,290 | 2,090 | 12,800 | 2,740 |
| Chile | 63 | 64 | 2,310 | 1,140 |
| Dominican Republic | 566 | 232 | 207 | 191 |
| Mexico | 21,800 | 8,850 | 23,000 | 9,540 |
| Netherlands | -- | -- | 289 | 142 |
| United Kingdom | 516 | 296 | 204 | 137 |
| Venezuela | 70 | 87 | 412 | 319 |
| Other | 1,430 r/ | 2,590 r/ | 745 | 1,080 |
| Total | 33,700 r/ | 14,300 r/ | 40,400 | 15,600 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Exports contain mixed (used plus new) rails totaling 7,590 metric tons valued at \$8,580,000 in 2000 and 7,700 metric tons valued at \$7,390,000 in 1999. Export valuation is free-alongside-ship (f.a.s.) value.

Source: U.S. Census Bureau.

TABLE 16
U.S. IMPORTS FOR CONSUMPTION OF USED RAILS FOR REROLLING AND OTHER USES,
BY COUNTRY 1/ 2/

| Country | 1999 | | 2000 | |
|-------------|---------------------------|----------------------|---------------------------|----------------------|
| | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) |
| Canada | 28,700 | 5,490 | 21,100 | 4,120 |
| France | 1 | 2 | 49 | 26 |
| New Zealand | -- | -- | 5 | 5 |
| Poland | 41,400 | 8,370 | 10,300 | 1,500 |
| Romania | -- | -- | 9,570 | 951 |
| Russia | 255,000 r/ | 27,600 | 217,000 | 25,600 |
| Ukraine | 13,600 | 1,410 | 13,200 | 1,660 |
| Other | 9,360 r/ | 964 r/ | 327 | 300 |
| Total | 348,000 r/ | 43,900 | 271,000 | 34,100 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Import valuation is Customs value.

Source: U.S. Census Bureau.

TABLE 17
U.S. EXPORTS OF DIRECT-REDUCED IRON (DRI), BY COUNTRY 1/ 2/

| Country | 1999 1/ | | 2000 | |
|----------------|------------------------------|----------------------|------------------------------|----------------------|
| | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) |
| Australia | -- | -- | 53 | \$6 |
| Canada | -- | -- | 86 | 9 |
| Italy | -- | -- | 28 | 3 |
| Japan | -- | -- | 26 | 3 |
| Mexico | 653 | \$69 | 1,440 | 181 |
| Taiwan | 40 | 4 | 137 | 14 |
| United Kingdom | 26 | 3 | 62 | 11 |
| Other | 2,560 | 226 | 139 | 15 |
| Total | 3,270 | 302 | 1,970 | 241 |

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Data are for steelmaking-grade DRI only.

Source: U.S. Census Bureau.

TABLE 18
U.S. IMPORTS FOR CONSUMPTION OF DIRECT-REDUCED IRON (DRI),
BY COUNTRY 1/ 2/

| Country | 1999 | | 2000 | |
|---------------------|------------------------------|----------------------|------------------------------|----------------------|
| | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) |
| Argentina | 35,300 | \$3,510 | -- | -- |
| Canada | 23 | 3 | 12,400 | \$2,180 |
| Japan | 19,000 | 2,010 | -- | -- |
| Mexico | -- | -- | -- | -- |
| Norway | -- | -- | 450 | 48 |
| Trinidad and Tobago | 26,300 | 2,110 | 64,000 | 6,560 |
| Venezuela | 870,000 | 78800 | 1,010,000 | 110000 |
| Total | 950,000 | 86,500 | 1,090,000 | 119,000 |

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Data are for steelmaking-grade DRI only.

Source: U.S. Census Bureau.

TABLE 19
U.S. EXPORTS OF PIG IRON, BY COUNTRY 1/ 2/

| Country | 1999 | | 2000 | |
|--------------------|--------------------------|----------------------|--------------------------|----------------------|
| | Quantity metric tons) | Value (thousands) | Quantity metric tons) | Value (thousands) |
| Australia | 2,430 | \$214 | 1,400 | \$123 |
| Canada | 10,100 | 1,680 | 4,270 | 761 |
| China | -- | -- | 186 | 39 |
| Korea, Republic of | -- | -- | 839 | 74 |
| Malaysia | -- | -- | 1,140 | 100 |
| Mexico | 64,300 | 8,500 | 58,700 | 8,020 |
| Saudi Arabia | -- | -- | 540 | 47 |
| Singapore | 224 | 20 | 355 | 31 |
| South Africa | -- | -- | 1,730 | 152 |
| Spain | -- | -- | 1,260 | 111 |
| Taiwan | 397 | 35 | 338 | 30 |
| United Kingdom | -- | -- | 432 | 38 |
| Other | 5,550 r/ | 610 r/ | 932 | 99 |
| Total | 83,000 | 11,100 | 72,100 | 9,620 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes the following grades of pig iron: less than or equal to 0.5% phosphorus content, greater than 0.5% phosphorus content, and alloy grade. Export valuation is free-alongside-ship (f.a.s.) value.

Source: U.S. Census Bureau.

TABLE 20
U.S. IMPORTS FOR CONSUMPTION OF PIG IRON, BY COUNTRY 1/ 2/

| Country | 1999 | | 2000 | |
|--------------|--------------------------|----------------------|--------------------------|----------------------|
| | Quantity metric tons) | Value (thousands) | Quantity metric tons) | Value (thousands) |
| Brazil | 2,540,000 | \$271,000 | 3,080,000 | \$374,000 |
| Canada | 117,000 | 20,700 | 109,000 | 18,300 |
| China | 20,700 | 2,340 | 41,100 | 4,740 |
| Japan | 112,000 | 11,000 | 5 | 10 |
| Norway | 5,190 | 552 | 5,000 | 617 |
| Poland | -- | -- | 12,400 | 1,640 |
| Russia | 688,000 | 63,100 | 423,000 | 45,200 |
| South Africa | 221,000 | 29,100 | 145,000 | 18,100 |
| Switzerland | 354,000 | 33,400 | 16,000 | 2,210 |
| Turkey | -- | -- | 44,000 | 5,520 |
| Ukraine | 921,000 | 94,600 | 1,070,000 | 129,000 |
| Venezuela | -- | -- | 23,000 | 2,370 |
| Other | 15,000 r/ | 1,410 r/ | 27 | 7 |
| Total | 4,990,000 | 527,000 | 4,970,000 | 601,000 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes the following grades of pig iron: less than or equal to 0.5% phosphorus content, greater than 0.5% phosphorus content, and alloy grade. Import valuation is Customs value.

Source: U.S. Census Bureau.