Iron and Steel

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HEAVY DEMAND for all steel products in 1955 resulted in a record output of 76.8 million tons of pig iron and 117 million tons of steel, and at the end of the year the industry had enough orders to assure near-capacity operations for the first quarter of 1956. Blast and steel furnaces operated at 92.6 and 93.0 percent of capacity, respectively, for the year. For pig iron, capacity increased 1.5 million tons to a new high of 85.5 million short tons. The capacity of steelmaking furnaces increased 2.5 million tons to a new high of 128.4 million short tons. Since World War II the United States population has increased about 21 percent; the steel-capacity increase was 40 percent. At the end of the year the capacity per capita was 1,550 pounds, compared with 1,340 pounds in 1946.

TABLE 1.—Salient statistics of iron and steel in the United States, 1946–50 (average) and 1951–55, in short tons

	1946–50 (average)	1951	1952	1953	1954	1955
Pig iron:						
Production	56,213,104	70,277,938	61,308,424	74,853,319	57,947,551	76,848,509
Shipments	56,207,983	70,250,379	61,234,790	74,162,829	57,782,686	77,300,681
Imports	234,114	1,066,513	380,200	589,825	290,716	283,559
Exports	40,358	6,555	14,085	18,837	10,247	34,989
Steel:[1]						
Production of ingots and castings:						
Open-hearth:						
Basic	74,088,036	92,387,447	82,143,400	99,827,729	80,019,628	104,804,570
Acid	599,409	779,071	703,039	646,094	307,866	554,847
Bessemer	4,056,933	4,890,946	3,523,677	3,855,705	2,548,104	3,319,517
Electric[2]	4,245,925	7,142,384	6,797,923	7,280,191	5,436,054	8,357,151
Total	82,990,303	105,199,848	93,168,039	111,609,719	88,311,652	117,036,085
Capacity, annual, as of Jan. 1	94,575,800	104,229,650	108,587,670	117,547,470	124,330,410	125,828,310
Percent of capacity	87.8	100.9	85.8	94.9	71.0	93.0
Production of alloy steel:						
Stainless	[3] 595,586	[3] 938,749	[3] 935,012	[3] 1,054,113	852,021	1,222,316
Other	[3] 6,695,257	[3] 9,185,838	[3] 8,199,739	[3] 9,274,081	6,340,842	9,437,775
Total	7,290,843	10,124,587	9,134,751	10,328,194	7,192,863	10,660,091
Shipments of steel products:						
For domestic consumption	58,318,865	76,164,539	64,732,412	77,472,162	60,618,843	81,134,367
For export	3,309,559	2,764,411	3,271,200	2,679,731	2,533,883	3,583,077
Total	61,628,424	78,928,950	68,003,612	80,151,893	63,152,726	84,717,444

[1] American Iron and Steel Institute.
[2] Includes small quantity of crucible and oxygen steel process for 1954-55.
[3] Revised figure.

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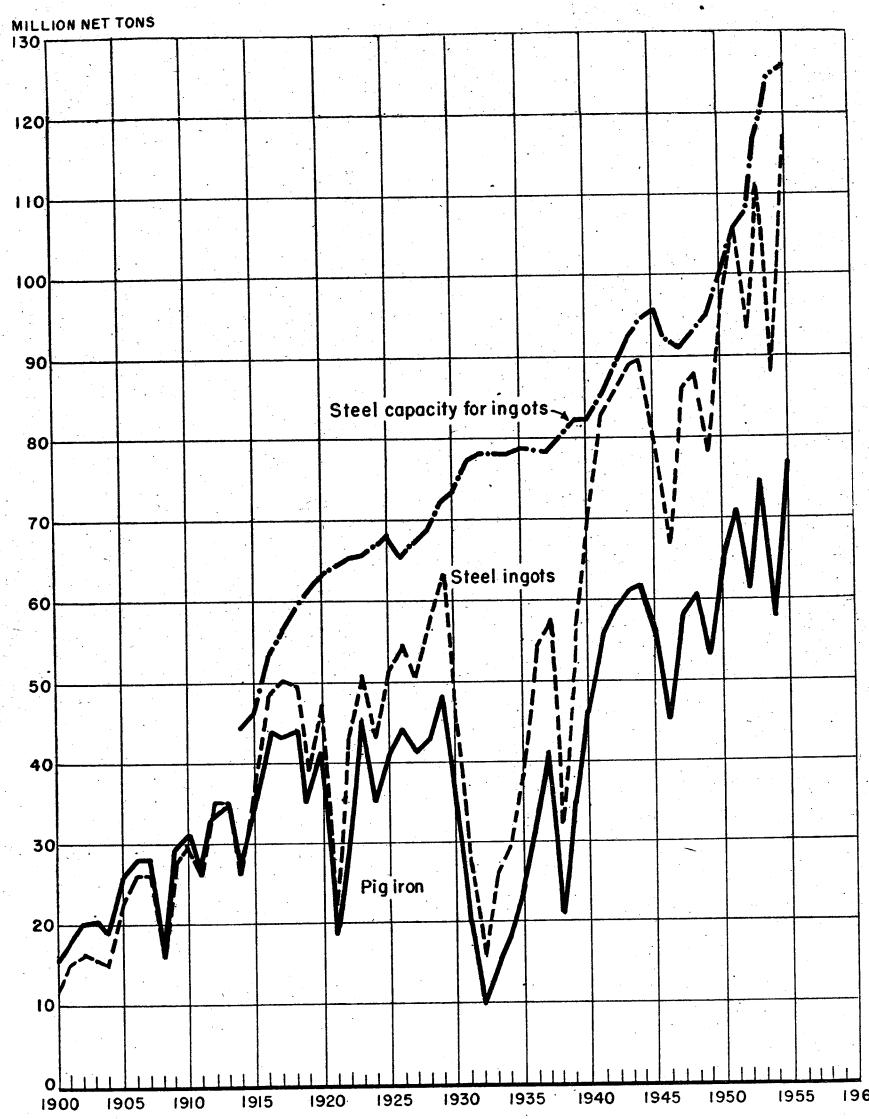

FIGURE 1.—United States trends in production of pig iron and steel ingots (1900–1955) and steel-ingot capacity (1914–1955).

Outstanding developments for the year included blowing in the world's largest blast furnace, tapping the Nation's largest vacuum furnace (2,200 pounds), and successfully operating for the entire year the first oxygen-steelmaking plant in the United States.

Shipments of steel products for the year reached a new high of 84.7 million tons, compared with 63.2 million tons in 1954. Shipments to all consuming industries increased, with the greatest increase to the automotive, construction, and container industries. The average

value, f. o. b. mill, of all steel products, computed from figures supplied by the Bureau of the Census, United States Department of Commerce, was 7.099 cents per pound in 1955, compared with 6.956 cents per pound in 1954. The average value of pig iron at furnaces increased 75 cents per net ton to $50.68. Steel exports for 1955 were 3,583,077 short tons, an increase of 41 percent over the 1954 total of 2,533,883.

Average statistics on employment in the steel industry in 1955 (1954 figures in parentheses) were as follows: 545,000 employees (493,000) worked 40.5 hours per week (37.9) for $2.37 per hour ($2.20).

PRODUCTION AND SHIPMENTS OF PIG IRON

Domestic production of pig iron, exclusive of ferroalloys, was 76.8 million short tons—an increase of 33 percent over 1954 and 3 percent above the previous record year, 1953. Production and shipments increased in all producing States. Owing to the increased demand for pig iron during the year, the blast-furnace operating rate increased from 81 percent of capacity in January to 91 percent in March and 98 percent in December. There were 14 furnaces out of blast at the end of the year, compared with 55 on January 1. Pig-iron production in 1955 required 89,990,847 short tons of domestic iron and manganiferous ores and 16,198,015 tons of foreign ores. Consumption of foreign ore almost doubled. Canada, Venezuela, and Peru supplied 42, 35, and 12 percent, respectively, of imports. Most Canadian ore was from the Iron Ore Co. of Canada's Ungava areas in Labrador and New Quebec. During the year this company shipped 8.5 million tons to the recently opened Seven Islands Terminal, the majority destined for the United States.

TABLE 2.—Pig iron produced and shipped in the United States, 1954–55, by States

State	Produced		Shipped from furnaces			
			1954		1955	
	1954 (short tons)	1955 (short tons)	Short tons	Value	Short tons	Value
Alabama	4,064,921	4,923,552	3,986,336	$187,256,826	4,930,579	$236,105,703
California	860,162	1,122,091	872,301		1,111,279	
Colorado						
Texas	2,606,604	3,150,534	2,680,394	173,372,870	3,171,015	220,873,220
Utah						
Illinois	4,516,872	6,489,015	4,534,969	227,159,687	6,466,534	331,126,618
Indiana	7,489,911	8,716,885	7,485,520	375,496,935	8,734,168	443,621,548
Kentucky	592,083	817,115	592,083	(1)	817,115	(1)
Maryland	3,792,487	4,043,401	3,786,897	(1)	4,055,413	(1)
Massachusetts	134,986	136,586	107,594	(1)	146,690	(1)
Michigan	2,010,733	3,294,823	2,033,965	(1)	3,345,538	(1)
Minnesota	539,293	708,738	521,811	(1)	752,393	(1)
New York	3,658,099	5,038,451	3,589,079	181,610,385	5,128,759	264,338,459
Ohio	11,184,567	15,372,349	11,160,022	545,901,439	15,444,439	762,162,095
Pennsylvania	14,717,549	20,788,373	14,652,426	740,221,256	20,949,219	1,074,680,915
Tennessee	1,779,284	2,246,596	1,779,289	(1)	2,247,540	(1)
West Virginia						
Undistributed [1]				454,220,339		584,427,329
Total	57,947,551	76,848,509	57,782,686	2,885,239,737	77,300,681	3,917,335,887

[1] Concealed to prevent revealing individual company operations.

Shipments of pig iron increased 34 percent in quantity and 36 percent in value over 1954. Data on total shipments consisting predominantly of molten pig iron transferred to steel furnaces on the site are given in table 4. Values for merchant pig iron are included; however, the average value per ton of pig iron was lower than market prices published in trade journals because handling charges, selling commissions, freight costs, and other related items were excluded. The term "shipped" as distinguished from "production" refers (as in the case of on-site transfers) to departmental transfers, upon which value was placed for bookkeeping purposes, rather than to actual sales (as in the case of merchant pig iron).

TABLE 3.—Foreign iron and manganiferous ores consumed in manufacturing pig iron in the United States, 1954–55, by sources of ore, in short tons

Source	1954	1955	Source	1954	1955
Africa	181,086	156,911	Peru	977,189	2,009,280
Brazil	42,295	58,288	Sweden	596,104	577,056
Canada	1,573,786	6,755,035	Venezuela	3,725,336	5,640,683
Chile	1,375,297	686,381	Unclassified	60,548	98,984
Cuba	31,926	7,227			
India	2,326	3,573	Total	8,769,033	16,198,015
Mexico	203,140	204,597			

TABLE 4.—Pig iron shipped from blast furnaces in the United States, 1954–55, by grades [1]

Grade	1954			1955		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Foundry	4,795,471	$228,570,455	$47.66	3,268,468	$159,611,970	$48.83
Basic	45,285,844	2,269,324,903	50.11	64,268,630	3,260,139,719	50.73
Bessemer	4,812,890	240,682,526	50.01	5,693,360	288,786,970	50.72
Low-phosphorus	188,283	10,810,762	57.42	280,971	15,657,626	55.73
Malleable	2,573,054	129,520,499	50.34	3,623,386	184,286,212	50.86
All other (not ferroalloys)	127,144	6,330,592	49.79	165,866	8,853,390	53.38
Total	57,782,686	2,885,239,737	49.93	77,300,681	3,917,335,887	50.68

[1] Includes pig iron transferred directly to steel furnaces at same site.

Metalliferous Materials Used.—The production of pig iron in 1955 required 133.4 million short tons of iron ore, sinter, and manganiferous ore; 4.1 million tons of mill cinder and roll scale; 5.5 million tons of open-hearth and Bessemer slags; 3.8 million tons of scrap (purchased and home, excluding blast-furnace home scrap); and 22,500 tons of other materials—an average of 1.910 tons of metalliferous materials (exclusive of flue dust) per ton of pig iron.

Alabama furnaces consumed hematite from the Birmingham district and Missouri, brown ores from Alabama and Georgia, and byproduct ore from Tennessee; imported iron ores from Brazil, Labrador, Peru, Sweden, and Venezuela; and foreign manganese-bearing ores from Brazil and India.

Blast furnaces at Fontana, Calif., were supplied with iron ore from the Eagle Mountain mine, Riverside County, Calif.

Pueblo, Colo., furnaces (Colorado Fuel & Iron Corp.) used iron ores from Wyoming and Utah.

Iron ores consumed at Sparrows Point, Md., were imported almost entirely from Labrador, Venezuela, Chile, Peru, and Sweden. The manganiferous ore came from Egypt and South Africa.

The Lake Superior region was the primary source of iron ores for Pennsylvania blast furnaces. The major foreign sources were Venezuela, Peru, and Canada; and a small quantity of manganiferous ore came from Africa.

Blast furnaces in Illinois, Indiana, and West Virginia were supplied with iron and manganiferous ores from the Lake Superior region of the United States and Canada. Furnaces in West Virginia also used iron ore from the new Canadian development in Labrador.

Blast furnaces in Ohio used iron ore from the Lake Superior region of the United States and Canada and an increased quantity of foreign ore from Africa, Labrador, and Venezuela.

The Everett, Mass., blast furnace used iron ore from Algeria, Brazil, Labrador, Newfoundland, Peru, Spain, and Venezuela, as well as from the Lake Superior region.

In New York blast furnaces in the Buffalo district used magnetite from the Mineville district of New York, hematite from Canadian and domestic mines in the Lake Superior region, and manganiferous ores from Minnesota and India and Labrador. The Troy furnace at Troy, N. Y., consumed magnetite from Chateaugay mine at Lyon Mountain, N. Y., and manganiferous ore from South Africa.

Texas furnaces used brown ores from east Texas, foreign iron ore from Brazil and Mexico, and manganese ore from Mexico.

Utah furnaces used iron ore from Iron County, Utah, manganiferous ore from Nevada and Utah, and manganese ore from Mexico.

TABLE 5.—Number of blast furnaces (including ferroalloy blast furnaces) in the United States, December 31, 1954–55

[American Iron and Steel Institute]

State	Dec. 31, 1954			Dec. 31, 1955		
	In blast	Out of blast	Total	In blast	Out of blast	Total
Alabama	16	5	21	20	1	21
California	2	1	3	3		3
Colorado	4		4	4		4
Illinois	17	5	22	21	1	22
Indiana	21	2	23	22	1	23
Kentucky	3		3	3		3
Maryland	9		9	9		9
Massachusetts	1		1		1	1
Michigan	6	2	8	8		8
Minnesota	3		3	3		3
New York	14	3	17	16	1	17
Ohio	41	12	53	48	5	53
Pennsylvania	56	22	78	74	4	78
Tennessee	2	1	3	3		3
Texas	2		2	2		2
Utah	4	1	5	5		5
Virginia	1		1	1		1
West Virginia	4	1	5	5		5
Total	206	55	261	247	14	261

TABLE 6.—Iron ore and other metallic materials, coke and fluxes consumed, and pig iron produced in the United States, 1954–55, by States, in short tons

State	Metalliferous materials consumed						Net coke	Fluxes	Pig iron produced	Metalliferous materials consumed per ton of pig iron made					Coke and fluxes consumed per ton of pig iron	
	Iron and manganiferous ores		Sinter [1]	Net scrap [2]	Miscellaneous [3]	Total				Ores	Sinter [1]	Net scrap [2]	Miscellaneous [3]	Total	Coke	Fluxes
	Domestic	Foreign														
1954																
Alabama	6,392,211	1,004,069	1,759,873	182,691	86,320	9,425,164	4,215,365	1,496,833	4,064,921	1.820	0.433	0.045	0.021	2.319	1.037	0.368
Illinois	7,198,512	32,168	990,692	189,704	677,158	9,088,234	3,901,882	1,719,239	4,516,872	1.601	.219	.042	.150	2.012	.864	.381
Indiana	11,653,838	50,925	1,975,007	144,987	1,063,372	14,888,129	6,207,650	2,745,608	7,489,911	1.563	.264	.019	.142	1.988	.829	.367
Ohio	14,303,658	750,750	3,946,300	730,350	1,480,093	21,211,151	9,911,664	4,783,389	11,184,567	1.346	.353	.065	.132	1.896	.886	.428
Pennsylvania	14,662,762	2,565,932	7,223,233	814,574	2,043,585	27,310,086	12,446,961	5,966,038	14,717,549	1.171	.491	.055	.139	1.856	.846	.405
California, Colorado, Utah	2,625,563	17,417	2,153,016	23,872	241,525	5,061,393	2,166,352	773,443	2,795,319	.946	.770	.009	.086	1.811	.775	.277
Kentucky, Tennessee, Texas	1,730,612	248,927	267,527	100,394	185,946	2,533,406	1,249,849	683,917	1,376,549	1.438	.194	.073	.135	1.840	.908	.497
Maryland, West Virginia	3,078,983	3,949,576	1,824,511	113,775	670,295	9,637,140	4,521,733	1,834,325	5,458,752	1.287	.334	.021	.123	1.765	.828	.336
Michigan, Minnesota	3,416,628	7,999	952,716	263,924	197,581	4,838,848	2,198,830	1,146,607	2,550,026	1.343	.374	.103	.077	1.897	.862	.450
New York, Massachusetts	4,241,222	141,270	2,017,219	278,202	370,776	7,048,689	3,183,895	1,519,859	3,793,085	1.155	.532	.073	.098	1.858	.839	.401
Total	69,303,989	8,769,033	23,110,094	2,842,473	7,016,651	111,042,240	50,004,181	22,669,258	57,947,551	1.347	.399	.049	.121	1.916	.863	.391
1955																
Alabama	6,969,971	1,888,279	1,966,917	211,006	61,925	11,098,098	4,828,558	1,734,142	4,923,552	1.799	.399	.043	.013	2.254	.981	.352
Illinois	10,505,762	159,332	1,048,087	345,129	912,469	12,970,779	5,637,406	2,366,665	6,489,015	1.644	.161	.053	.141	1.999	.869	.365
Indiana	13,348,592	556,587	2,123,546	99,346	1,336,585	17,464,656	7,424,267	3,116,035	8,716,885	1.595	.244	.011	.153	2.003	.852	.357
Ohio	18,154,115	3,361,585	4,651,900	919,055	2,015,202	29,101,857	13,554,053	6,258,245	15,372,349	1.400	.302	.060	.131	1.893	.882	.407
Pennsylvania	21,458,320	4,086,975	8,993,763	1,187,847	3,131,274	38,858,179	17,710,743	8,496,209	20,788,373	1.229	.433	.057	.150	1.869	.852	.409
California, Colorado, Utah	3,534,887	2,641	2,652,881	65,078	206,631	6,462,118	2,724,984	1,105,955	3,560,789	.993	.745	.018	.058	1.814	.765	.311
Kentucky, Tennessee, Texas	2,018,307	449,763	339,950	164,266	239,496	3,211,782	1,495,188	770,650	1,724,872	1.431	.197	.095	.139	1.862	.867	.447
Maryland, West Virginia	3,075,717	5,241,333	1,816,521	117,957	691,524	10,943,052	5,017,319	1,966,016	6,094,076	1.365	.298	.019	.114	1.796	.823	.323
Michigan, Minnesota	5,828,785	7,862	1,223,687	340,236	262,617	7,663,187	3,480,606	1,727,381	4,003,561	1.458	.306	.085	.065	1.914	.869	.431
New York, Massachusetts	5,096,391	443,658	2,373,022	362,880	768,507	9,044,458	4,364,127	2,000,148	5,175,037	1.071	.459	.070	.148	1.748	.843	.386
Total	89,990,847	16,198,015	27,190,274	3,812,800	9,626,230	146,818,166	66,237,251	29,541,446	76,848,509	1.382	.354	.049	.125	1.910	.862	.384

[1] Includes sintered flue dust. [2] Excludes home scrap produced at blast furnaces. [3] Does not include recycled material.

PRODUCTION AND SHIPMENTS OF STEEL

Steel production in 1955 in the United States was 117 million short tons, or 93 percent of capacity, with an AISI index of 139.7 (1947–49=100). The corresponding figures for 1954 were 88.3, 71.0, and 105.4, respectively. Of the total tonnage of steel ingots produced in the United States in 1955, 90 percent was made in open-hearth furnaces, compared with 91 percent in 1954 and 90 percent in 1953; 7 percent in the electric furnace, compared with 6 percent in 1954 and 7 percent in 1953; and 3 percent in the Bessemer converter, the same as in 1954 and 1953.

In 1955, 35 percent of domestic steel was produced in the Pittsburgh-Youngstown district, 23 percent in the Chicago district, 21 percent in the Eastern district, 10 percent in the Cleveland-Detroit district, 6 percent in the Western district, and 5 percent in the Southern district, compared with 35, 23, 20, 10, 6, and 6 percent, respectively, in 1954. The above districts are those designated by AISI.

During the year, open-hearth capacity increased 2,082,880 short tons to 112,317,040 tons and electric-furnace capacity, 451,900 to 11,259,010; Bessemer capacity remained unchanged. The figure for electric-furnace capacity includes 540,000 short tons of oxygen-converter capacity.

Steelmaking-capacity figures represent net-steel capacity after the producers deducted an average of 8.8 percent for operating time lost for rebuilding, relining, repairs, and holiday shutdowns (AISI). The output from steel foundries that did not produce steel ingots was not included in the production data.

Shipments of steel, including exports, in 1955 totaled 84,717,444 short tons, a 34.1-percent increase over the 1954 total of 63,152,726 tons. The automotive industry was again the largest steel consumer, receiving 18,721,880 short tons or 23.1 percent of total domestic shipments, compared with 19.5 percent in 1954.

The construction and container industries ranked second and third as consumers, receiving 9,681,778 and 6,723,074 short tons, respectively. The 1955 percentages of domestic shipments were 11.9 and 8.3, compared with 14.2 and 9.7 in 1954.

Rail transportation and ordnance and other military uses showed little change in the percentage of shipments received.

Alloy Steel.—The Bureau of Mines uses the American Iron and Steel Institute specifications for alloy steels in which the minimum of the range specified for one or more of the elements named exceeds the following percentages: Manganese 1.65, silicon 0.60, copper 0.60, and aluminum, boron, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium, zirconium, and other alloying elements in any added percent.

The 1955 steel production included 10,660,091 short tons of alloy steel, an increase of 48 percent over 1954; it was 9 percent of the total steel output, compared with 8 percent in 1954 and 9 percent in 1953.

Stainless steel (11 percent of the 1955 alloy-steel output) had its second million-ton year, with the production of 1,218,213 short tons of ingots. The output for the year was 44 percent higher than in

1954 and 16 percent greater than in the previous record million-ton year, 1953. The production of austenitic stainless steel AISI 300 (nickel-bearing) and 200 series (manganese-nickel-bearing), representing 54 percent of the total stainless-steel production, increased 38 percent over 1954; and the ferritic and martensitic, straight chromium types, AISI 400 series, increased 52 percent. Production of the 200 series (1,914 tons) was reported for the first time by the steel industry in 1955. Some sources indicate that the AISI 200 series, grades 201 and 202, may be used as a substitute for up to 100 percent of the higher nickel 301 and 302 grades. The output of types 501, 502, and other high-chromium, heat-resisting steels included in the stainless-steel-production figure increased 43 percent over 1954. Production of all grades of alloy steel, other than stainless, increased. Carbon-boron steels more than doubled, and all other boron-treated alloy grades increased 27 percent. Chromium-vanadium steels increased 80 percent, chromium steels 60 percent, manganese-molybdenum 7 percent, and silicomanganese 72 percent. The percentages of alloy steel produced in the basic open-hearth, acid open-hearth, and electric furnaces were 63, 2, and 35 percent, respectively, the same as in 1954.

TABLE 7.—Steel capacity, production, and percentage of operations in the United States, 1946–50 (average) and 1951–55, in short tons [1]

[American Iron and Steel Institute]

Year	Annual capacity as of Jan. 1	Production				
		Open hearth	Bessemer	Electric [2]	Total	Percent of capacity
1946–50 (average)	94,575,800	74,687,445	4,056,933	4,245,925	82,990,303	87.6
1951	104,229,650	93,166,518	4,890,946	7,142,384	105,199,848	100.9
1952	108,587,670	82,846,439	3,523,677	6,797,923	93,168,039	85.8
1953	117,547,470	100,473,823	3,855,705	7,280,191	111,609,719	94.9
1954	124,330,410	80,327,494	2,548,104	5,436,054	88,311,652	71.0
1955	125,828,310	105,359,417	3,319,517	8,357,151	117,036,085	93.0

[1] Includes only that portion of steel for castings produced in foundries operated by companies manufacturing steel ingots. Omitted portion is about 2 percent of total steel production.
[2] Includes small quantity of crucible and oxygen steel process for 1954-55.

TABLE 8.—Open-hearth steel ingots and castings manufactured in the United States, 1946–50 (average) and 1951–55, by States, in short tons [1]

[American Iron and Steel Institute]

State	1946–50 (average)	1951	1952	1953	1954	1955
New England States	423,563	535,014	436,993	489,967	327,108	468,893
New York and New Jersey	4,114,687	5,271,387	[2] 4,521,685	[2] 5,771,684	[2] 4,596,359	[2] 6,304,168
Pennsylvania	21,685,152	26,977,599	24,224,361	28,805,249	20,549,346	29,357,878
Ohio	13,387,162	16,842,144	14,759,616	17,570,814	13,661,994	18,446,670
Indiana	9,819,246	11,888,961	10,414,109	13,818,187	12,330,815	15,032,809
Illinois	6,009,173	7,271,633	6,508,525	7,735,397	5,963,127	8,025,030
Other States	19,248,462	24,379,780	21,981,150	26,282,525	22,898,745	27,723,969
Total	74,687,445	93,166,518	82,846,439	100,473,823	80,327,494	105,359,417

[1] Includes only that portion of steel for castings produced in foundries operated by companies manufacturing steel ingots. Omitted portion is about 2 percent of total steel production.
[2] New York only; New Jersey included in "Other States."

TABLE 9.—Bessemer-steel ingots and castings manufactured in the United States, 1946–50 (average) and 1951–55, by States, in short tons [1]

[American Iron and Steel Institute]

State	1946–50 (average)	1951	1952	1953	1954	1955
Ohio	1,825,285	2,208,456	1,922,776	2,326,983	1,658,176	2,268,715
Pennsylvania	1,262,669	1,345,297	751,297	689,814	451,845	589,249
Other States	968,979	1,337,193	849,604	838,908	438,083	461,553
Total	4,056,933	4,890,946	3,523,677	3,855,705	2,548,104	3,319,517

[1] Includes only that portion of steel for castings produced in foundries operated by companies manufacturing steel ingots. See table 7.

TABLE 10.—Steel electrically manufactured in the United States, 1946–50 (average) and 1951–55, in short tons [1]

[American Iron and Steel Institute]

Year	Ingots	Castings	Total [2]	Year	Ingots	Castings	Total [2]
1946–50 (average)	4,149,555	96,370	4,245,925	1953	7,226,030	54,161	7,280,191
1951	7,043,366	99,018	7,142,384	1954	5,381,209	54,845	5,436,054
1952	6,703,734	94,189	6,797,923	1955	8,303,933	53,218	8,357,151

[1] Includes only that portion of steel for castings produced in foundries operated by companies manufacturing steel ingots. See table 7.
[2] Includes very small quantity of crucible steel and oxygen steel process for 1954-55

TABLE 11.—Alloy-steel ingots and castings manufactured in the United States, 1946–50 (average) and 1951–55, by processes, in short tons [1]

[American Iron and Steel Institute]

Process	1946–50 (average)	1951	1952	1953	1954	1955
Open hearth:						
Basic	5,212,332	6,585,635	5,807,191	6,599,038	4,528,336	6,735,450
Acid	120,437	238,034	218,867	185,341	130,559	185,473
Electric [2]	1,958,074	3,300,918	3,108,693	3,543,815	2,533,968	3,739,168
Total	7,290,843	10,124,587	9,134,751	10,328,194	7,192,863	10,660,091

[1] Includes only that portion of steel for castings produced in foundries operated by companies manufacturing steel ingots. See table 7.
[2] Includes very small quantity of crucible steel and oxygen steel process for 1954-55.

Metalliferous Materials Used in Steelmaking.—Scrap and pig iron consumed in steel furnaces in 1955 totaled 129.7 million net tons; the percentage of each was 48 and 52, respectively, compared with 47 and 53 in 1954 and 1953. In addition, steel furnaces consumed 3,352,182 tons of domestic ore and 4,615,966 tons of foreign ore. Again in 1955, more foreign ore than domestic was consumed in steelmaking furnaces. Sources of the foreign ore were Liberia, Brazil, Canada, Chile, Cuba, Dominican Republic, Mexico, Peru, Santo Domingo, Sweden, and Venezuela. Also used was 1,751,663 tons of sinter made from both domestic and foreign ores.

Iron ore was employed both as a source of metallics and oxygen in the refining process. Ore included in the furnace charge is called "charge ore" and ore added after the charge has melted is "feed ore". The characteristics required of charge and feed ore are similar—hard-lump structure, high iron content, and freedom from fines.

CONSUMPTION OF PIG IRON

Consumption of pig iron in 1955 was 77,216,335 tons—an increase of 32 percent over 1954. In 1955, 88 percent of the pig iron went to steelmaking furnaces (open-hearth, Bessemer, and electric) to be processed into steel, 4 percent was used to make direct castings, and 8 percent was consumed in ironmaking furnaces. Although plants in all 48 States and the District of Columbia used some pig iron, consumption was concentrated largely in the steelmaking centers of the East North Central, Middle Atlantic, South Atlantic, and East South Central States. These areas in 1955 consumed 93 percent of the pig iron. Pennsylvania (the leading consumer) used 27 percent of the total and Ohio (second largest) 20 percent.

TABLE 12.—Metalliferous materials consumed in steel furnaces in the United States, 1946–50 (average) and 1951–55, in short tons

Year	Iron ore		Sinter	Pig iron	Ferro-alloys [1]	Iron and steel scrap
	Domestic	Foreign				
1946–50 (average)	3,474,095	1,045,406	1,076,086	48,714,243	1,172,800	44,053,460
1951	3,774,770	2,369,165	1,701,404	61,750,383	1,470,000	57,087,329
1952	3,511,221	2,275,868	1,614,512	53,491,734	1,461,000	52,217,060
1953	4,178,398	3,459,075	1,817,722	65,839,018	[2] 1,654,000	59,100,900
1954	2,619,871	3,640,771	1,143,160	51,658,482	1,270,000	46,064,651
1955	3,352,182	4,615,966	1,751,663	67,957,207	[3] 1,620,000	61,774,897

[1] Includes ferromanganese, spelgeleisen, silicomanganese, manganese briquets, ferrosilicon, and ferrochromium alloys.
[2] Revised. [3] Preliminary.

TABLE 13.—Consumption of pig iron in the United States, 1952–55, by type of furnace

Type of furnace or equipment	1952		1953		1954		1955	
	Short tons	Percent of total	Short tons	Percent of total	Short tons	Percent of total	Short tons	Percent of total
Open hearth	49,374,315	80.2	61,306,565	82.1	48,632,261	82.9	63,750,490	82.6
Bessemer	3,998,751	6.5	4,351,117	5.8	2,848,691	4.9	3,932,920	5.1
Electric	118,668	.2	181,336	.3	177,530	.3	273,797	.3
Cupola	5,438,294	8.8	5,549,522	7.4	4,896,703	8.3	5,961,861	7.7
Air	317,500	.5	313,051	.4	232,422	.4	295,209	.4
Crucible	152	(1)	268	(1)	42	(1)	38	(1)
Direct castings	2,303,281	3.8	3,005,882	4.0	1,874,400	3.2	3,002,020	3.9
Total	61,550,961	100.0	74,707,744	100.0	58,662,049	100.0	77,216,335	100.0

[1] Less than 0.05 percent.

TABLE 14.—Consumption of pig iron in the United States, 1951–55 by States and districts, in short tons

District and State	1951	1952	1953	1954	1955
New England:					
Connecticut	83,101	60,598	63,436	48,981	50,126
Maine	9,647	4,072	5,928	3,057	3,357
Massachusetts	231,897	165,324	174,513	140,194	160,664
New Hampshire	4,762	4,607	3,503	3,731	3,731
Rhode Island	57,792	46,842	49,432	38,583	53,316
Vermont	17,331	14,643	8,974	9,033	10,626
Total	404,530	296,086	305,786	243,579	281,820
Middle Atlantic:					
New Jersey [1]	295,182	244,320	200,572	207,610	234,153
New York	3,416,408	3,128,013	3,689,763	2,984,809	3,891,870
Pennsylvania [1]	20,314,328	17,026,406	20,608,854	14,601,423	20,600,273
Total	24,025,918	20,398,739	24,499,189	17,793,842	24,726,296
East North Central:					
Illinois [1]	5,948,201	4,893,725	6,055,031	4,320,164	5,877,830
Indiana [1]	8,339,759	7,044,738	8,928,835	7,713,815	9,411,067
Michigan	3,605,019	3,294,753	3,811,411	3,140,805	4,642,449
Ohio [1]	13,230,964	11,650,525	14,641,399	11,117,854	15,203,917
Wisconsin	341,120	278,670	258,786	206,221	259,552
Total	31,465,063	27,162,411	33,695,462	26,498,859	35,394,815
West North Central:					
Iowa	152,275	101,833	89,467	71,868	88,072
Kansas, Nebraska	10,395	6,682	12,378	6,559	7,322
Minnesota, North Dakota, South Dakota	620,166	506,084	518,930	486,718	601,199
Missouri	103,115	80,995	77,075	36,002	51,864
Total	885,951	695,594	697,850	601,147	748,457
South Atlantic:					
Delaware, District of Columbia, Maryland	3,871,880	3,144,907	3,919,420	3,877,686	4,260,786
Florida, Georgia	79,929	60,528	65,111	24,600	45,371
North Carolina	29,946	27,194	22,644	17,886	23,456
South Carolina	21,521	12,911	10,501	13,107	14,165
Virginia, West Virginia	1,929,435	1,862,646	1,933,541	1,706,519	2,006,306
Total	5,932,711	5,108,186	5,951,217	5,639,798	6,350,084
East South Central:					
Alabama	3,902,199	3,527,809	4,163,931	3,554,765	4,319,869
Kentucky [1], Mississippi, Tennessee	1,041,910	845,718	1,055,604	764,232	1,137,360
Total	4,944,109	4,373,527	5,219,535	4,318,997	5,457,229
West South Central:					
Arkansas, Louisiana, Oklahoma	13,981	11,961	12,464	8,673	10,229
Texas	578,593	418,964	568,161	661,821	749,298
Total	592,574	430,925	580,625	670,494	759,527
Mountain:					
Arizona, Nevada, New Mexico	866	144	195	266	82
Utah and Colorado	1,864,848	1,776,397	2,506,885	1,889,089	2,259,694
Montana	276	181	243	99	150
Idaho, Wyoming	689	504	235	225	30
Total	1,866,679	1,777,226	2,507,558	1,889,679	2,259,956

See footnote at end of table

TABLE 14.—Consumption of pig iron in the United States, 1951–55 by States and districts, in short tons—Continued

District and State	1951	1952	1953	1954	1955
Pacific:					
California [1]	1,271,574	1,288,561	1,233,898	1,000,576	1,223,264
Oregon	25,208	19,706	15,357	5,078	14,887
Washington					
Total	1,296,782	1,308,267	1,249,255	1,005,654	1,238,151
Undistributed [1]			1,267		
Total United States	71,414,317	61,550,961	74,707,744	58,662,049	77,216,335

[1] Small tonnages of pig iron, not separable, shown as "Undistributed."

PRICES

The average value of all grades of pig iron, f. o. b. blast furnaces, was $50.68 in 1955, compared with $49.93 in 1954. The figures in table 4 were compiled from producers' reports to the Bureau of Mines; they do not include ferroalloys.

The weighted averages, f. o. b. value of all grades of steel, given in table 17, were computed from statistics supplied by the Bureau of the Census.

The 1955 average composite price (published by Iron Age) was 4.977 cents per pound, compared with 4.716 cents per pound in 1954. Prices increased in June and July.

TABLE 15.—Average value of pig iron at blast furnaces in the United States, 1946–50 (average) and 1951–55, by States, per short ton

State	1946–50 (average)	1951	1952	1953	1954	1955
Alabama	$32.66	$43.87	$45.10	$46.63	$46.97	$47.89
California	37.45	48.50	50.83	51.14	51.08	53.82
Colorado						
Utah						
Illinois	35.69	46.53	48.31	49.85	50.09	51.21
Indiana	36.11	46.59	48.16	49.29	50.16	50.79
New York	34.48	48.01	49.31	50.46	50.60	51.54
Ohio	35.75	45.67	47.65	49.44	48.92	49.35
Pennsylvania	35.93	47.08	49.16	50.69	50.52	51.30
Other States [1]	38.24	47.98	48.70	49.66	50.61	50.78
Average	35.94	46.75	48.43	49.83	49.93	50.68

[1] Comprises Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Tennessee, Texas, Virginia, and West Virginia.

TABLE 16.—Average monthly prices per short ton of chief grades of pig iron, 1954–55

Month	Foundry pig iron at Birmingham furnaces		Foundry pig iron at Valley furnaces		Bessemer pig iron at Valley furnaces		Basic pig iron at Valley furnaces	
	1954	1955	1954[1]	1955	1954[1]	1955	1954	1955
January	$47.22	$47.22	$50.45	$50.45	$50.89	$50.89	$50.00	$50.00
February	47.22	47.22	50.45	50.45	50.89	50.89	50.00	50.00
March	47.22	47.22	50.45	50.45	50.89	50.89	50.00	50.00
April	47.22	47.22	50.45	50.45	50.89	50.89	50.00	50.00
May	47.22	47.22	50.45	50.45	50.89	50.89	50.00	50.00
June	47.22	47.22	50.45	50.45	50.89	50.89	50.00	50.00
July	47.22	48.66	50.45	52.12	50.89	52.56	50.00	51.67
August	47.22	49.11	50.45	52.68	50.89	51.96	50.00	52.23
September	47.22	49.11	50.45	52.68	50.89	51.96	50.00	52.23
October	47.22	49.11	50.45	52.68	50.89	51.96	50.00	52.23
November	47.22	49.11	50.45	52.68	50.89	51.96	50.00	52.23
December	47.22	49.11	50.45	52.68	50.89	51.96	50.00	52.23
Average	47.22	48.13	50.45	51.52	50.89	51.96	50.00	51.07

[1] Revised figure.

FOREIGN TRADE[3]

Pig-iron imports decreased slightly from the 1954 figure of 290,716, and exports of this commodity almost tripled the 1954 figure of 10,247. Canada supplied 92 percent of the pig iron imported into the United States. Exports of pig iron totaled 34,989 short tons ($1,917,641) of which Canada and Japan received 96 percent.

Exports of iron and steel products totaled 4.4 million short tons, an increase of 44 percent over 1954. Imports of semifinished iron and steel products increased 53 percent, and finished iron and steel products increased 10 percent.

TABLE 17.—F. o. b. value of steel-mill products in the United States, 1954–55, in cents per pound[1]

Product	1954				1955			
	Carbon	Alloy	Stainless	Average	Carbon	Alloy	Stainless	Average
Ingots	[2] 3.408	11.013	18.702	[2] 8.379	3.308	9.382	25.366	[3] 4.431
Semifinished shapes and forms	4.463	7.571	22.988	5.226	4.668	7.575	22.967	5.272
Plates	4.993	12.015	46.408	5.484	5.135	13.424	55.044	5.475
Sheets and strips	5.830	11.864	45.953	6.654	5.992	12.245	46.874	6.837
Tin-mill products	7.699			7.699	7.824			7.824
Structural shapes and piling	4.835	6.097		4.843	5.117	7.250		5.148
Bars	5.940	10.802	52.971	7.204	6.188	11.325	51.515	7.516
Rails and railway track material	5.415			5.415	5.848			5.848
Pipes and tubes	8.165	14.883	148.687	8.918	8.472	14.858	162.519	9.243
Wire and wire products	[2] 9.690	30.478	61.577	[2] 10.273	10.077	29.124	66.312	10.810
Other rolled and drawn products	7.770	22.002	55.404	9.135	8.521	25.439	51.728	11.503
Average total steel	[2] 6.294	11.394	45.430	[2] 6.956	6.391	11.581	46.878	7.099

[1] Computed from figures supplied by the U. S. Department of Commerce, Bureau of the Census.
[2] Revised.
[3] The decrease in the value of all ingots was almost entirely due to an increase in the shipments of lower price carbon from 55 percent of the total in 1954 to 92 percent of the total in 1955. Shipments of carbon steel ingots accounted for 95 percent of total ingot shipments in 1953.

[3] Figures on imports and exports compiled by Mae B. Price and Elsie D. Page, Division of Foreign Activities, Bureau of Mines, from records of the U. S. Department of Commerce.

TABLE 18.—Pig iron imported for consumption in the United States, 1946–50 (average) and 1951–55, by countries, in short tons

[U. S. Department of Commerce]

Country	1946–50 (average)	1951	1952	1953	1954	1955
North America:						
Canada	43,368	220,094	288,722	305,256	203,303	260,741
Mexico	2,450					
Total	45,818	220,094	288,722	305,256	203,303	260,741
South America:						
Argentina	(1)					
Brazil	110	33,936				
Chile	1,517	57,241	2,577			
Total	1,627	91,177	2,577			
Europe:						
Austria	16,241	82,628	11,071			
Belgium-Luxembourg	11,385	16,605	3,045			
Finland				168		
France	11,171	37,323	343			
Germany	50,415	331,244	[2] 16,203	[2] 3,539	[2] 31,854	
Italy	1,000	123	1			
Netherlands	62,339	99,189	12,735	18,475	7,914	1,232
Norway	7,782	15,352	6,369	2,692	3,482	224
Poland-Danzig	1,493					
Spain		34,048	25,224	4,665	11,704	3,000
Sweden	3,313	43,822	2,096	56,633	1,203	2,466
Turkey		36,587	622			
U. S. S. R.	271					
United Kingdom	2,623	3,957				
Total	168,033	700,878	77,709	86,172	56,157	6,922
Asia: India	9,269	34,158		12,659	7,470	11,217
Africa:						
Federation of Rhodesia and Nyasaland				[3] 6,606	[4] 1,944	241
Union of South Africa	67	20,206			5,517	1,425
Total	67	20,206		6,606	7,461	1,666
Oceania: Australia	9,300		11,192	179,132	16,325	3,013
Grand total: Short tons	234,114	1,066,513	380,200	589,825	290,716	283,559
Value	$8,974,259	$49,169,985	$19,846,695	$25,967,435	$13,315,255	$14,563,612

[1] Less than 1 ton.
[2] West Germany.
[3] Southern Rhodesia.
[4] Southern Rhodesia not separately classified after July 1, 1954; 1,562 net tons, January–June.

TABLE 19.—Major iron and steel products imported for consumption in the United States, 1953–55

[U. S. Department of Commerce]

Products	1953		1954		1955	
	Net tons	Value	Net tons	Value	Net tons	Value
Semimanufactures:						
Steel bars:						
Concrete reinforcement bars	108,913	$8,204,340	[1] 164,289	[1][2] $11,689,830	158,973	[2] $13,559,126
Solid and hollow, n. e. s.	98,115	10,170,334	[1] 40,873	[1][2] 3,858,537	33,005	[2] 3,642,584
Hollow and hollow drill steel	539	182,154	378	144,307	592	[2] 183,256
Iron slabs, blooms, or other forms	-------	-------	219	49,554	79	17,909
Bar iron	174	42,614				
Wire rods, nail rods, and flat rods up to 6 inches in width	65,418	6,939,265	39,848	4,047,003	47,761	[2] 5,699,167
Boiler and other plate iron and steel, n. e. s.	133,221	15,943,332	2,242	240,682	4,026	477,653
Steel ingots, blooms, and slabs	48,536	4,167,762	[1] 8,783	[1][2] 1,216,009	146,103	[2] 10,635,444
Billets, solid or hollow	85,145	9,991,676				
Die blocks or blanks, shafting, etc.	421	118,851	310	[2] 80,743	285	46,464
Circular saw plates	17	16,362	13	[2] 21,904	24	18,688
Sheets of iron or steel, common or black and boiler or other plate iron or steel	325,658	43,798,269	789	107,121	2,903	392,171
Sheets and plates and steel, n. s. p. f.	1,005	151,436	197	262,272	298	90,287
Tinplate, terneplate, and taggers' tin	419	68,441	143	[2] 31,305	44	16,826
Total semimanufactures	867,581	99,794,836	[1] 258,084	[1][2] 21,749,267	394,093	[2] 34,779,575
Manufactures:						
Structural iron and steel	458,239	39,925,169	[1] 276,828	[1][2] 28,000,467	266,161	[2] 28,963,223
Rails for railways	2,005	137,393	3,511	191,847	6,278	362,469
Rail braces, bars, fishplates, or splice bars and tie plates	1,041	83,925	267	25,029	772	[2] 36,323
Pipes and tubes:						
Cast-iron pipe and fittings	3,818	454,307	6,868	[2] 876,427	9,219	[2] 1,383,590
Other pipes and tubes	237,804	53,305,392	[1] 66,250	[1][2] 10,810,489	77,105	[2] 10,990,257
Wire:						
Barbed	15,658	1,818,301	52,948	[2] 6,079,100	60,084	7,695,229
Round wire, n. e. s.	17,494	2,383,102	40,794	[2] 4,771,604	40,495	[2] 5,627,152
Telegraph, telephone, etc., except copper, covered with cotton jute, etc.	171	190,297	422	[2] 295,870	635	[2] 582,963
Flat wire and iron or steel strips	35,072	7,559,378	17,438	[1][2] 4,894,711	24,985	[2] 7,065,453
Rope and strand	4,333	1,602,936	3,939	[2] 1,619,444	5,537	[2] 2,933,517
Galvanized fencing wire and wire fencing	3,442	365,695	10,435	[2] 1,191,220	13,460	[2] 1,709,300
Iron and steel used in card clothing	[3]	356,590	[3]	308,945	[3]	409,196
Hoop and band iron and steel, for baling	13,703	1,452,575	17,500	1,819,972	6,261	726,812
Hoop, band and strips, or scroll iron or steel, n. s. p. f.	32,543	3,005,587	[1] 20,995	[1] 1,669,642	24,157	2,192,376
Nails	40,244	5,385,895	92,829	[2] 11,559,148	132,838	[2] 18,093,133
Castings and forgings, n. e. s.	6,325	1,835,340	5,459	1,855,545	7,998	[2] 2,242,451
Total manufactures	871,892	119,861,882	[1][2] 616,483	[1][2] 75,969,460	675,985	[2] 91,013,444
Advanced manufactures:						
Bolts, nuts, and rivets	12,017	3,436,911	15,568	[2] 3,964,850	21,643	[2] 5,402,242
Chains and parts	1,027	693,875	1,139	[2] 754,590	1,556	[2] 974,561
Hardware, builders'	-------	113,869	----------	[1][2] 249,626	-------	[2] 341,011
Hinges and hinge blanks	-------	531,351	----------	[2] 1,328,068	-------	[2] 1,363,490
Screws (wholly or chiefly of iron or steel)	-------	1,040,932	----------	[2] 708,291	-------	[2] 1,328,502
Tools	-------	5,308,867	----------	5,255,219	-------	[2] 8,198,468
Other advanced manufactures	-------	32,830	----------	27,297	-------	[2] 25,672
Total advanced manufactures	-------	11,158,635	----------	[1][2] 12,287,941	-------	17,633,946
Grand total	-------	230,815,353	----------	[2] 110,006,668	-------	[2] 143,426,965

[1] Revised figure.
[2] Owing to changes in tabulating procedures by the U. S. Department of Commerce data known not to be comparable to years before 1954.
[3] Weight not recorded.

TABLE 20.—Major iron and steel products exported from the United States, 1953–55

[U. S. Department of Commerce]

Products	1953		1954		1955	
	Net tons	Value	Net tons	Value	Net tons	Value
Semimanufactures:						
Steel ingots, blooms, billets, slabs, and sheet bars	89,620	$8,140,371	29,465	$2,619,317	614,797	$50,826,763
Iron and steel bars and rods:						
Iron bars	519	166,770	1,142	333,021	408	89,559
Concrete reinforcement bars	53,354	5,574,688	29,856	3,078,997	73,969	8,018,949
Other steel bars	122,828	18,767,586	[1] 59,895	[1] 10,434,982	131,276	21,424,479
Wire rods	9,489	1,232,367	[1] 9,025	[1] 946,232	30,930	3,227,968
Iron and steel plates, sheets, skelp, and strips:						
Plates, including boiler plate, not fabricated	201,673	24,861,106	154,149	19,548,635	215,391	28,803,072
Skelp iron and steel	98,717	8,672,578	56,793	5,214,634	88,329	8,455,238
Iron and steel sheets, galvanized	110,590	20,423,943	[1] 142,945	[1] 25,444,070	157,036	28,102,680
Steel sheets, black, ungalvanized	517,893	79,872,271	[1] 616,266	[1] 97,976,710	1,067,085	164,614,295
Strip, hoop, bands, and scroll iron and steel:						
Cold-rolled	42,527	12,185,977	31,042	11,264,852	54,149	19,063,245
Hot-rolled	51,535	6,725,892	25,355	4,148,970	38,373	7,022,547
Tin plate and terneplate	514,797	94,720,263	[1] 712,284	[1] 122,895,046	837,268	143,169,614
Total semimanufactures	1,813,542	281,343,812	[1] 1,868,217	[1] 303,905,466	3,309,011	482,818,409
Manufactures—steel-mill products:						
Structural iron and steel:						
Water, oil, gas, and other storage tanks complete and knocked-down material	69,508	16,359,762	[1] 60,773	[1] 14,389,849	41,781	11,294,219
Structural shapes:						
Not fabricated	234,600	24,533,010	267,259	28,452,461	280,370	32,492,319
Fabricated	61,579	19,306,021	[1] 48,054	[1] 15,440,392	87,690	22,105,039
Plates, sheets, fabricated, punched or shaped	16,606	4,684,843	14,023	4,040,272	16,616	4,219,659
Metal lath	1,936	691,173	[1] 2,759	[1] 810,947	2,452	829,066
Frames, sashes, and sheet piling	12,241	2,362,973	23,013	3,444,699	11,035	2,116,256
Railway-track material:						
Rails for railways	190,867	18,987,548	96,914	9,778,837	57,869	4,583,524
Rail joints, splice bars, fishplates, and tieplates	51,557	6,945,446	18,006	3,194,633	11,279	2,316,702
Switches, frogs, and crossings	2,552	959,837	2,704	939,349	3,000	932,772
Railroad spikes	4,935	808,372	2,414	395,871	1,930	369,962
Railroad bolts, nuts, washers, and nut locks	1,741	481,086	917	342,513	818	317,480
Tubular products:						
Boiler tubes	40,695	10,248,268	19,899	7,364,461	26,708	7,683,990
Casing and line pipe	416,534	72,331,971	[1] 306,152	[1] 54,738,453	216,049	44,704,025
Seamless black and galvanized pipe and tubes, except casing, line and boiler, and other pipes and tubes	32,207	6,176,106	32,007	6,291,517	22,140	4,977,734
Welded black pipe and tubes	36,701	6,326,737	56,232	8,254,480	27,929	5,351,135
Welded galvanized pipe and tubes	38,861	7,287,613	11,273	2,252,681	12,125	2,449,004
Malleable-iron screwed pipe fittings	2,854	2,217,071	2,013	1,685,040	1,857	1,652,137
Cast-iron pressure pipe and fittings	26,554	3,913,996	21,489	3,360,190	21,021	3,077,033
Cast-iron soil pipe and fittings	8,458	1,479,446	10,770	1,830,344	9,243	1,695,536
Iron and steel pipe and fittings, n. e. c.	49,616	26,568,565	[1] 43,582	[1] 23,374,691	48,928	27,422,795
Wire and manufactures:						
Barbed wire	3,519	564,137	3,695	630,744	1,641	285,576
Galvanized wire	10,159	2,393,379	5,056	1,343,608	10,668	2,175,877
Iron and steel wire, uncoated	25,639	4,854,034	23,441	4,757,463	23,299	5,670,926
Spring wire	4,890	2,545,172	4,242	2,088,331	4,696	2,444,793
Wire rope and strand	13,224	6,208,285	13,228	6,755,653	14,166	7,263,801
Woven-wire fencing and screen cloth	4,006	[2] 2,096,509	3,244	[2] 1,831,168	4,174	[2] 2,265,921
All other	29,312	9,198,870	26,700	8,977,445	30,576	10,816,808

See footnotes at end of table.

TABLE 20.—Major iron and steel products exported from the United States, 1953–55—Continued

[U. S. Department of Commerce]

Products	1953		1954		1955	
	Net tons	Value	Net tons	Value	Net tons	Value
Manufactures—steel-mill products—Continued						
Nails and bolts, iron and steel, n. e. c.:						
Wire nails	3,960	1,641,394	3,235	1,705,901	3,090	2,022,481
All other nails, including tacks and staples	2,277	1,151,451	2,489	1,277,073	2,733	1,401,259
Bolts, machine screws, nuts, rivets, and washers, n. e. c.	17,326	13,499,554	13,752	11,254,985	19,874	15,446,646
Castings and forgings: Iron and steel, including car wheels, tires, and axles	100,793	22,800,403	[1] 66,121	[1] 16,650,107	109,534	25,323,043
Total manufactures	1,515,707	299,623,032	[1] 1,205,456	[1] 247,654,158	1,125,291	255,707,518
Advanced manufactures:						
Buildings (prefabricated and knockdown)		9,377,647		[1] 4,998,798		6,983,005
Chains and parts	14,519	10,195,052	9,505	7,693,658	8,266	7,950,403
Construction material	6,371	3,346,785	6,762	4,000,865	8,012	4,727,559
Hardware and parts		12,707,947		14,342,712		17,123,664
House-heating boilers and radiators		5,614,357		6,644,674		7,896,943
Oil burners and parts		8,252,306		8,244,712		10,134,831
Plumbing fixtures and fittings		5,746,459		6,203,291		7,407,358
Tools		41,916,336		43,238,299		48,183,073
Utensils and parts (cooking, kitchen, and hospital)	1,294	3,785,707	1,272	3,783,383	1,531	4,569,769
Other advanced manufactures		22,138,247		23,595,543		29,411,837
Total advanced manufactures		123,080,843		[1] 122,745,935		144,388,442

[1] Revised figure.

[2] Includes wire cloth as follows—1953: $1,060,693 (7,394,124 square feet); 1954: $952,431 (5,529,215 square feet); 1955: $1,163,185 (6,950,825 square feet).

TECHNOLOGY

Industry.—During 1955 there was an increased emphasis on the use of sinter in the Nation's blast furnaces. At least 12 new sintering lines were planned; some were under construction or had been completed. In Alabama high-grade foreign-ore fines were sintered with low-grade home ore to produce an ideal blast-furnace feed. At Bethlehem Steel Co., Bethlehem, Pa., the practice during the year was to use from 60 to 70 percent sinter in blast furnaces; and the Gary Works, United States Steel Corp., reported a 100-percent sinter burden in No. 12 blast furnace for a period of 9 months.

The results of the Gary test showed a definite increase in iron production with lower coke rates and lower flue-dust rates when the 100-percent sinter charge was used as compared with the normal burden. It was not necessary to provide a long period of adjustment when the burden is changed to higher sinter content. There was virtually no change in the temperature of the iron produced.[4]

The Duquesne works of United States Steel saved manganese by using open-hearth slag as part of its blast-furnace feed. Furnaces operated satisfactorily with 450 pounds of open-hearth slag per ton

[4] Sundquist, R. W., One-Hundred-Percent Sinter Burden at Gary Works: Pres. at AIME Blast-Furnace, Coke-Oven, and Raw Materials Conf., Philadelphia, Pa., Apr. 18–20, 1955.

of pig iron produced. The iron-ore equivalent of this quantity of slag is 280 pounds, and the flux content reduced the amount of limestone required from 1,150 pounds to 825 per ton of pig iron produced. The increase in the manganese content of the iron, plus a change in practice (that is, adding all ferromanganese to the steel ladle) resulted in a 19-percent decrease in the quantity of manganese required for steelmaking. Although the phosphorus content of pig iron doubled, it was easily lowered to normal in open-hearth furnaces with an early- and full-flushing slag practice. Sulfur was no problem in the open hearth; in fact, melt sulfur and ladle sulfur both decreased.[5]

The world's largest blast furnace, erected for Great Lakes Steel Corp. at Detroit, Mich., was blown in on June 5, 1955. Construction required 10 months, and 500 men were employed at one time at peak building stages. The furnace has a hearth diameter of 30 feet 3 inches and a rated capacity of 50,000 tons of iron per month. However, some engineers predict that, as operating experience develops, the furnace may average over 60,000 tons a month. Approximately 90 employees are needed to man the furnace and its auxiliary installations for 3 shifts. When operating at 100 percent of rated capacity, the furnace will use 3,200 short tons of iron ore, 1,300 tons of coke, 550 tons of limestone, 55,000 tons of cooling water, and 5,000 tons of air per day. Raw-material handling and charging are completely automatic, requiring only manipulation of a pushbutton at the loading pit when a charge is initiated. While the furnace was being constructed, every attention was given to preventing air and stream pollution.[6]

Since February 1951 the National Steel Corp. has used oxygen-enriched air in its four blast furnaces. Oxygen is supplied from an oxygen plant with a daily capacity of 450 tons. The average oxygen enrichment is 1.5 percent, which results in a 7-percent increase in equivalent wind volume and a 7-percent increase in pig-iron output. With 2-percent oxygen enrichment, the above equivalent wind volume and iron output would increase 9 percent. Velocities of gases up the stack with 2-percent oxygen enrichment or an 83,300-c. f. m.-equivalent blast are approximately the same as with 76,000 c. f. m. of normal air. The cost of oxygen, including amortization of the plant, is well under $5.00 per ton.[7]

Perhaps the most outstanding development in steelmaking for the year was that McLouth Steel Corp., United States, and Dominion Steel of Canada, demonstrated that the Linz-Donawitz process is practical for making high-grade steel. About 1.7 million tons of such steel was made in the 2 countries during 1955. At the end of the year several other companies in the United States announced plans for capacity increases of some 800,000 tons by this process. Studies also were being made on combining the process with the metallurgical-blast (hot) cupola instead of the blast furnace. It was reported that for a capacity of 500,000 tons per year the cost for building an oxygen-steelmaking plant would be about half that of an open-hearth shop.

[5] Speer, E. B., Use of Open-Hearth Slag in Blast Furnaces, and Effect on Open-Hearth Practices: Pres. at AIME Blast-Furnace, Coke-Oven, and Raw Materials Conf., Philadelphia, Pa., Apr. 18–20, 1955.
[6] Iron and Steel Engineer, vol. 32, No. 6, June 1955, p. 148.
[7] Strassburger, Julius H., Blast-Furnace Oxygen Operations: Pres. at 64th Ann. Meeting, Am. Iron and Steel Inst., New York, N. Y., May 23, 1956.

One advantage of oxygen steel is that its cold-working properties are superior to those of open-hearth steel, which makes it especially suitable for cold-drawn wire and cold-rolled strip and sheets.

Another technique that offers promise of increasing steel production at relatively low cost, is the use of desiliconized molten pig iron. With this procedure, hot metal from the blast furnace is desiliconized with oxygen, while, simultaneously, about one-fourth of the carbon is being removed. During this phase of the process, the metal temperature increases about 500° F. to 2,950° F. The partly refined metal then is charged into the open hearth to replace the molten pig iron. The extra heat in the metal, plus a reduction in refining time, results in savings in both fuel and furnace time. Estimated production increases with this practice range from 25 percent with 50 percent metal to 50 percent with 70 percent metal. Molten pig iron outside the steelmaking furnace is desiliconized in England and West Germany.

Weirton Steel Corp. was building the largest open hearth in the world (600 tons) as part of its expansion program. The furnace will be about 100 feet long.

The Nation's largest vacuum-melting induction furnace (capacity, 2,240 pounds) was put into operation at the end of the year by Vacuum Metals Corp. at Syracuse, N. Y. With a vacuum furnace of this size, vacuum melting is entering an era of commercial operation.

Substituting manganese stainless steels (AISI specifications 201 and 202) for the higher nickel-content (8 percent) stainless (300 series) received further attention during the year. Various sources indicate that manganese stainless steels could replace up to half the nickel-bearing grades. Substituting manganese for nickel, both stockpile items, would have little effect on our manganese supply, as the quantity of manganese required in the new stainless steels is very small compared with total consumption of manganese.

Recovering manganese from manganese stainless-steel scrap, however, would be a problem, because most of the manganese would find its way into the slag during remelting operations, whereas all the nickel remains in the melt.[8]

Bureau of Mines.—The Bureau of Mines made a number of significant contributions to iron and steel technology during 1955.

At Pittsburgh it was demonstrated in tests that anthracite could be used as a substitute for coke in the experimental blast furnace. Satisfactory operation was obtained with fuel burdens composed of 100-percent anthracite. In cooperation with industry, anthracite also was utilized as a partial substitute for coke in a metallurgical cupola with a daily capacity of 400 tons.

In a side-surface-blown basic converter the 3-percent phosphorus-iron byproduct of the manganese experiment on recovering manganese from open-hearth slag was successfully dephosphorized to less than 0.030 percent. This iron would be an ideal molten feed or melting stock, if cold, for steelmaking furnaces. Citrate-solubility fertilizer tests of the resulting slag indicated that nearly all of the phosphorus content was available.

Much progress was made in the relatively unexplored field of high-temperature reactions. Few facts are available on the values of

[8] Bennett, Edmund V., Low-Nickel Austenitic Stainless Steels: Nat. Acad. Sci. Rept. MAB-45-SM, June 10, 1955, 33 pp.

activity coefficients in liquid-metal solutions at high temperatures, and this information is needed frequently in applying thermodynamic data to steelmaking problems. The iron-copper system has been investigated, and the iron-silicon system was being studied.

In an effort to decrease the melting time and reduce the cost of steelmaking, experiments were continued with a portable, top-fired, scrap preheater for heating scrap before charging into the furnace. Results thus far indicate that oxidation losses are negligible below 1,800° F. and that heat recovery varies between 60 and 80 percent, depending on the velocity of the gaseous products of combustion and the depth of the scrap bed.

The Bureau of Mines was attempting to develop an economic method of recovering strategic metals from high-temperature alloy scrap. Studies on solidification, segregation, inclusions, and deoxidation procedures also were made to improve the quality of steel and abandon the wasteful practice of adding unnecessary critical alloys to steel. The project on utilizing the soft and fine iron ores of East Texas and low-grade fuels was continued. Electric-furnace smelting and duplex treatment were utilized.

WORLD PRODUCTION

World production of pig iron and steel in 1955 reached a new high of 211.5 and 297.6 million short tons, respectively, a 21-percent increase for both commodities. The United States, the European Coal and Steel Community, and the Soviet Union ranked first, second, and third in both pig-iron and steel production. The United States produced 37 percent of world pig iron and 39 percent of world steel, compared with 34 and 36 percent, respectively, in 1954.

Brazil.—The Brazilian Government authorized the Companhia Siderurgica Nacional, the largest steel producer in Brazil, to build a new steel mill in Piassaguera, Sao Paulo, in cooperation with Companhia Siderurgica Paulista. The plant will be similar to the Volta Redonda steel mill; it will have an annual capacity of 1 million tons and cost $60 million.[9]

India.—During 1955 expansion of the Indian iron and steel industry continued to meet the high demand for steel, which has far exceeded supply for many years. To meet the high requirements for steel products, imports increased 125 percent over 1954.

Satisfactory progress was made in the three Government-sponsored steel plants that are being constructed in Rourkela, Bhilai, and Durgapur with German, Soviet, and British assistance, respectively. The work at Rourkela included exploration of iron-ore and limestone deposits; construction of power stations, roads, and railroads; and leveling operations at the plant site for foundations. At Bhilai and Durgapur the work included acquisition of land, prospecting for iron ore, and preliminary work covering water-supply and powerplants.

The existing steel plants also were expanding. Tata Iron & Steel Co. at Jamshedpur proceeded with its scheme to produce 2 million tons annually. Mysore Iron & Steel Works at Bhadravati plans

[9] Mining World, vol. 17, No. 13, December 1955, p. 86.

TABLE 21.—World production of pig iron (including ferroalloys), by countries,[1] 1946–50 (average) and 1951–55, in thousand short tons [2]

[Compiled by Pearl J. Thompson]

Country [1]	1946–50 (average)	1951	1952	1953	1954	1955
North America:						
Canada	2,191	2,819	2,914	3,166	2,327	3,380
Mexico [3]	251	282	340	271	297	356
United States	57,934	72,472	63,391	77,201	59,752	79,263
Total	60,400	75,600	66,600	80,600	62,400	83,000
South America:						
Argentina	[4] 20	31	30	39	30	40
Brazil	574	[4] 875	906	984	1,222	[4] 1,200
Chile	36	265	298	315	336	282
Total	[4] 630	1,200	1,200	1,300	1,600	[4] 1,500
Europe:						
Austria	590	1,159	1,295	1,456	1,493	1,662
Belgium	3,605	5,366	5,280	4,648	5,092	5,872
Bulgaria			12	28	44	50
Czechoslovakia [4]	1,740	2,290	2,570	3,075	3,100	3,310
Denmark	32	36	40	40	44	60
Finland	88	112	119	88	83	127
France	6,894	9,753	10,894	9,678	9,855	12,220
Germany:						
East	223	375	718	1,177	1,436	1,653
West	5,757	11,791	14,194	12,846	13,792	18,168
Hungary	371	578	638	777	904	942
Italy [5]	493	1,200	1,425	1,536	1,484	1,911
Luxembourg	2,355	3,480	3,391	3,000	3,086	3,401
Netherlands	398	579	594	654	672	739
Norway	215	270	301	305	271	387
Poland	1,246	1,786	2,028	2,601	2,932	3,439
Rumania [4]	210	390	430	500	480	640
Saar	1,168	2,612	2,811	2,626	2,752	3,174
Spain	634	748	868	911	1,004	1,097
Sweden	870	999	1,228	1,165	1,103	1,373
Switzerland	28	44	44	45	39	60
U. S. S. R. [4 6]	15,800	24,800	27,800	30,200	33,400	36,700
United Kingdom	9,852	10,868	12,015	12,516	13,309	13,966
Yugoslavia	192	289	317	310	406	585
Total [4 6]	52,800	79,500	89,000	90,200	96,800	111,500
Asia:						
China	[4] 380	[4] 1,400	[4] 2,200	3,300	3,340	3,400
India	1,732	2,043	2,076	1,990	2,197	2,154
Japan	1,172	3,557	3,952	5,129	5,237	5,990
Korea, North [4]	30	22	22	110	220	220
Taiwan (Formosa)	4	6	7	8	10	11
Thailand	[7] 9	10	[4] 2	6	2	2
Turkey	112	183	216	239	216	223
Total [4 6]	3,400	7,200	8,500	10,800	11,200	12,000
Africa:						
Rhodesia and Nyasaland, Federation of: Southern Rhodesia	[8] 29	35	43	40	41	61
Union of South Africa	723	887	1,245	1,348	1,319	1,433
Total	800	900	1,300	1,400	1,400	1,500
Oceania: Australia	1,239	1,484	1,735	2,064	2,079	2,010
World total (estimate)	119,300	166,000	168,000	186,000	175,500	211,500

[1] Pig iron is also produced in Belgian Congo and Indonesia, but quantity produced is believed insufficient to affect world total.

[2] This table incorporates a number of revisions of data published in previous Iron and Steel chapters. Data do not add to totals shown owing to rounding where estimated figures are included in detail.

[3] Excluding ferroalloy production, for which data are not yet available; estimate included in total.

[4] Estimate.

[5] Trieste included with Italy.

[6] U. S. S. R. in Asia included with U. S. S. R. in Europe.

[7] Average for 1 year only; 1950 was first year of commercial production.

[8] Average for 1948–50.

TABLE 22.—World production of steel ingots and castings, by countries, 1946–50 (average) and 1951–55, in thousand short tons [1]

[Compiled by Pearl J. Thompson]

Country	1946–50 (average)	1951	1952	1953	1954	1955
North America:						
Canada	3,009	3,569	3,703	4,116	3,195	4,529
Mexico	354	503	595	579	686	812
United States [2]	82,990	105,200	93,168	111,610	88,312	117,036
Total	86,353	109,272	97,466	116,305	92,193	122,377
South America:						
Argentina [3]	180	140	140	220	215	240
Brazil	577	929	984	1,120	1,265	1,376
Chile	37	196	271	345	354	320
Colombia [3]	8	11	11	----	----	385
Total [3]	802	1,276	1,406	1,685	1,834	2,321
Europe:						
Austria	656	1,133	1,166	1,415	1,822	2,010
Belgium	3,687	5,571	5,585	4,900	5,431	6,403
Bulgaria	----	----	----	----	55	60
Czechoslovakia [3]	2,770	3,870	4,180	4,880	5,070	5,400
Denmark	84	177	194	198	219	[3] 265
Finland	109	140	162	162	195	206
France	7,753	10,828	11,941	10,951	11,714	13,880
Germany:						
East	564	1,711	2,087	2,400	2,584	2,756
West	7,154	14,888	17,423	16,998	19,218	23,519
Greece [3]	17	33	37	45	62	73
Hungary	789	1,422	1,608	1,701	1,644	1,797
Ireland [3]	14	18	22	22	22	22
Italy [4]	2,081	3,376	3,897	3,858	4,637	5,947
Luxembourg	2,245	3,392	3,309	2,931	3,117	3,555
Netherlands	349	611	755	948	1,023	1,074
Norway	78	97	108	122	133	183
Poland	2,111	3,078	3,509	3,973	4,370	4,905
Rumania [3]	375	710	770	790	690	715
Saar	1,296	2,869	3,112	2,959	3,094	3,483
Spain	724	916	1,111	1,063	1,296	1,336
Sweden	1,423	1,658	1,836	1,939	2,028	2,344
Switzerland [5]	110	159	172	173	152	170
U. S. S. R. [3 6]	21,400	34,600	38,000	42,000	45,600	50,000
United Kingdom	16,160	17,515	18,389	19,723	20,742	22,166
Yugoslavia	380	488	499	580	692	903
Total [3 6]	72,300	109,300	119,900	124,700	135,600	153,200
Asia:						
China [3]	165	990	1,490	2,160	2,390	2,650
India	[7] 1,475	1,680	1,768	1,688	1,887	1,905
Japan	2,463	7,167	7,703	8,446	8,543	10,371
Korea:						
North [3]	43	44	33	33	55	140
Republic of		1	1	1	1	1
Pakistan	(7)	3	9	12	11	12
Taiwan (Formosa)	12	18	17	22	28	44
Thailand	[8] 9	10	[8] 4	1	2	2
Turkey	104	149	179	187	187	217
Total [3 6]	4,270	10,060	11,205	12,550	13,105	15,340
Africa:						
Belgian Congo	----	(9)	1	4	3	2
Egypt [3]	10	11	11	22	78	95
Rhodesia and Nyasaland, Federation of: Southern Rhodesia	13	31	40	28	36	55
Union of South Africa	681	1,045	1,326	1,368	1,577	1,742
Total	704	1,087	1,378	1,422	1,694	1,894
Oceania: Australia	1,414	1,606	1,839	2,288	2,476	2,460
World total (estimate)	165,800	232,600	233,200	259,000	246,900	297,600

[1] This table incorporates a number of revisions of data published in previous Iron and Steel chapters. Data do not add to totals shown owing to rounding where estimated figures are included in detail.

[2] Data from American Iron and Steel Institute. Excludes production of castings by companies that do not produce steel ingots.

[3] Estimate. [4] Trieste included with Italy. [5] Including secondary.

[6] U. S. S. R. in Asia included with U. S. S. R. in Europe. [7] Pakistan included with India.

[8] Average for 1 year only; 1950 was first year of commercial production. [9] Less than 500 tons.

to increase its 1955 annual capacity of 33,600 short tons to 112,000 tons. Three steel-fabricating plants, adjacent to 3 new steel plants and 2 steel foundries (1 at the Chittarnjan Locomotive Works), have been proposed. Other items of expansion include the installation of coal washers.

The export duty on iron and steel was abolished, and controls were again put into effect on distributing heavy structurals. A new Ministry of Iron and Steel was established. Other Government actions to aid the steel industry were appointment of an Iron and Steel Control Board, an organization for recruiting and training technical personnel to operate new steel plants, and a centralized group to coordinate rail transportation for steel imports.[10]

Japan.—The Japanese iron and steel industry enjoyed a year of unusual prosperity, and exports reached a record high. The 1955 production of iron and steel set new records, with 6.0 million short tons of pig iron, 10.4 million tons of crude steel, and 7.5 million tons of rolled ordinary steel, increases of 14, 21, and 24 percent, respectively, over 1954. Exports of iron and steel reached 2.3 million tons, an increase of 67 percent over the previous year.[11]

During the year a number of new techniques were introduced to improve iron and steelmaking. New sintering equipment was installed, and the use of sintered ores in the blast furnace increased. From using sized iron ores and sinter in the blast furnaces, output was increased and coke consumption decreased. Adopting automatic controls made striking improvements in open-hearth-furnace operation. In addition, the widespread application of oxygen in steelmaking, a changeover to heavy oil for fuel, and improvements in scrap-iron and charging equipment were important factors in saving materials and reducing fuel costs. Rolling mills attained greater efficiency and improved the quality of products by introducing modernized equipment, much of which was installed under United States technical guidance.

A number of companies announced expansion plans during the year: Yawata Iron & Steel Co. planned to install facilities for making heavy plate at a cost of about ¥5.5 billion [12] ($15.5 million). Nippon Steel Tube Co. applied for ¥900 million from the World Bank for its planned ¥3-billion medium-tube project to include a new strip mill. Fuji Iron & Steel Co. plans to improve its tinplate-making equipment. By far the largest expansion was that announced by the Kawasaki Steel Corp., to include a ¥4.9-billion strip mill and other construction at a total cost of ¥12.7 billion. Sumitomo Material Industries is planning a ¥980-million project at its Feltz-Moon Plant.[13]

United Kingdom.—Pig-iron and steel production in England in 1955 reached an alltime high of 14.0 million and 22.2 million short tons, respectively.

[10] U. S. American Consul, Calcutta, India, State Department Despatch 15, July 6, 1956.
[11] Japan Iron and Steel Federation, Statistical Yearbook for 1955, 1956: Summary, pp. i, ii.
[12] US$1=360 yen.
[13] U. S. Embassy, Tokyo, Japan, State Department Despatch 70, July 21, 1955.

The average output per blast furnace and open-hearth furnace in Britain has increased 75 percent from 1946 to 1954. During these years the industry spent an average of more than £1 million a week on modernization and development; expenditures in 1955 were about £80 million. As a result of modernizing, plants are operating more efficiently and economically; for example, fuel consumption per ton of steel has been reduced about 15 percent since World War II. The output of alloy steel has more than doubled since 1946; the estimated production was 1.4 million short tons in 1955, compared with 600,000 tons in 1946.[14]

Venezuela.—In September 1955 the Venezuelan Government announced that a contract for constructing the long-planned steel mill at Pureto Ordaz had been awarded to the Italian Fiat Group. The contract provides for a plant with an annual output of 395,000 to 465,000 short tons of finished products; the plant to be completed by the end of 1957. This project included an educational program in foreign countries to train Venezuelans to operate the plant.[15]

The European Coal and Steel Community.—Pig-iron and steel production in the European Coal and Steel Community topped all previous records in 1955, with 45.5 million short tons of pig iron and 57.9 million tons of steel. Pig iron was 24 percent above 1954 production, and steel 20 percent above.

The Community continued the program [16] for expanding its iron-ore, steelmaking, and finishing facilities. The problem in each country varied. For example, in West Germany the emphasis was on modernization and larger furnaces. During the year 5 new blast furnaces were put into operation, and the construction of 2 large, modern, continuous strip mills was underway. In addition, plans were made to increase annual steelmaking capacity from 23.6 million to 27.5 million tons. The modernization program in France is expected to raise the French and Saar steelmaking capacity to 18 million tons by 1960. Research in France was aimed at utilizing low-grade coals in producing coke. Italy was deficient in blast- and steel-furnace capacity and planned to build more of both. In Luxembourg and Belgium efforts were made to improve the efficiency of operations and scrap old mills and furnaces.

Community steel production increased. Basic Bessemer-steel production, 52.3 percent of total Community steel, was 22 percent more than in 1954. The open hearth, which supplied 39 percent of the total, increased 18 percent; and electric-furnace and other steels, representing slightly more than 8 percent, increased 23 percent.[17]

With respect to raw-material consumption in the steel industry: The salable iron-ore production of the Community in 1955 totaled 77.8 million short tons, compared with 66.8 million tons in 1954. The coking plants of the Community produced 75.6 million short tons of coke, compared with 65.9 million tons in 1954, an increase of nearly 15 percent. Of the 303.2 million tons of coal available, including 17.6 million tons from the United States, 100.8 million short tons was utilized in coking plants.

[14] Chemical Engineering and Mining Review, vol. 48, No. 6, Mar. 10, 1956, p. 188.
[15] Bureau of Mines, Mineral Trade Notes: Vol. 42, No. 3, March 1956, p. 12.
[16] Iron and Steel Engineer, vol. 33, No. 1, January 1956, pp. 119–166.
[17] European Iron and Steel Community, Fourth General Report on the Activities of the Community: Publications Department, Apr. 8, 1956, 277 pp.

Scrap still was in short supply within the Community in 1955. To alleviate the effect of high-priced, imported, American scrap, an equalizing fund was established. The various companies in the Community donated as much as $8 per ton to the fund for all purchased scrap consumed; the money was used to pay the difference in price between imported American scrap and domestic purchased scrap. The composite price of Community scrap per metric ton varied from $34 in May to $53 at the end of December. The price for imported American scrap was approximately $70, c. i. f., in December 1955. In addition to the fund a bonus was paid for increasing the pig iron: scrap ratio in steelmaking furnaces.

Investments in the Community iron and steel industry were estimated at $654 million in 1955, compared with $441 million in 1954. Over half was for rolling mills. The increased investments will result in enlarging coking capacity 1 million short tons, sintering plants 2.4 million tons, pig-iron capacity 0.9 million tons (excluding increases resulting from improved blast-furnace burden), steelmaking capacity 1.6 million tons, and rolling-mill capacity 4.6 million tons.

The $100 million loan by the United States was allocated for the following purposes: Collieries, power stations, coking plants, iron mining, and mineral-dressing facilities.