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Iron and Steel Scrap, Monthly

IRON AND STEEL SCRAP IN DECEMBER IN 1966

Total iron and steel scrap consumed in December was the lowest since July, and was 5 percent less than the consumption for November 1966, according to the Bureau of Mines, U.S. Department of the Interior. Pig iron consumption declined 1 percent during the month. Ferrous scrap comprised 49 percent of the total metallics consumed in December.

Steel production in December was down 4 percent from November and scrap used in steelmaking down 6 percent. Scrap comprised 44 percent of the metallics used in steel-making.

Consumers' stocks of scrap and pig iron at yearend were up by 7 and 27 percent, respectively, compared with the 1965 yearend figures. In 1966 the total iron and steel scrap consumption was 91,583,477 short tons, and pig iron consumption 91,769,618 tons, an increase over the previous year of 1.4 percent and 3.2 percent, respectively.

Table 1.-Production, receipts, consumption, and consumers' stocks of ferrous scrap and pig iron, July 1966 through December 1966
(Short tons)

Date	Scrap for consumption			Consumption		Consumers' stocks at end of month	
	Home scrap produced	Purchased scrap received (net)	Total	Scrap	Pig iron	Scrap	Pig iron ^{1/}
July----	4,380,182	2,641,443	7,021,625	6,795,002	7,596,088	7,708,651	2,464,119
Aug.----	4,713,635	3,048,905	7,762,540	7,497,833	7,733,564	7,982,108	2,452,364
Sept.---	4,786,632	2,908,244	7,694,876	7,677,176	7,797,554	8,004,897	2,516,154
Oct.----	4,752,045	3,086,213	7,838,258	7,809,510	7,943,480	8,035,247	2,652,262
Nov.----	4,544,901	2,963,284	7,508,185	7,506,672	7,383,748	8,033,746	2,787,743
Dec.----	4,480,056	^{2/} 2,791,949	7,272,005	7,112,381	7,292,754	8,192,802	2,961,618

^{1/} Suppliers' stocks included with consumers' stocks.

^{2/} Excludes 534,524 short tons of scrap shipped, transferred, or otherwise disposed of during the month.

Prepared June 2, 1967, by F. E. Brantley, Physical Scientist.

Table 2.-Production and receipts of ferrous scrap by major consuming industries' plants
July 1966 through December 1966
(Short tons)

Date	Home scrap produced			Purchased scrap received (net) <u>1/</u>		
	Mfgs. of steel ingots and castings	Mfgs. of steel castings	Iron foundries and miscel- laneous users	Mfgs. of steel ingots and castings	Mfgs. of steel castings	Iron foundries and miscel- laneous users
July-----	3,817,145	100,056	462,981	1,894,941	164,127	582,375
August-----	4,062,470	130,585	520,580	2,195,737	181,854	671,314
September-----	4,034,011	136,648	615,973	2,005,738	185,907	716,599
October-----	4,016,191	137,779	598,075	2,148,390	191,336	746,487
November-----	3,832,893	129,865	582,143	2,051,328	196,992	714,964
December-----	3,759,905	140,716	579,435	1,886,096	195,669	710,184

1/ Excludes scrap shipped, transferred, or otherwise disposed of during the month.

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Table 3.-Consumers' stocks, production, receipts, consumption and shipments of iron
and steel scrap, by grades, December 1966
(Short tons)

Grades of scrap	Stocks at beginning of month <u>2/</u>	Home scrap produced	Purchased scrap received <u>1/</u>	Consump- tion	Ship- ments	Stocks at end of month
Steel scrap, excludes rerolling rails:						
Carbon-----	6,110,390	3,317,697	2,785,814	5,524,207	408,045	6,281,649
Alloy, excludes stainless-----	332,650	213,918	52,399	268,590	10,324	320,053
Stainless-----	118,246	48,504	30,500	76,646	4,521	116,083
Cast iron, includes borings-----	1,471,892	899,937	457,760	1,242,938	111,634	1,475,017
Total-----	8,033,178	4,480,056	3,326,473	7,112,381	534,524	8,192,802

1/ Revised.

2/ Purchased scrap received from dealers and all others.

Table 4.-Home scrap produced by source, by type of manufacturers, during December 1966
(Short tons)

	Source of scrap			Total
	Recirculating 1/	Obsolete 2/	Other including slag	
Manufacturers of steel ingots and castings-----	3,282,913	276,802	200,190	3,759,905
Manufacturers of steel castings-----	139,929	584	203	140,716
Iron foundries and miscellaneous users-----	564,381	14,053	1,001	579,435
Total-----	3,987,223	291,439	201,394	4,480,056

1/ Includes home, plant, or recycled iron and steel scrap.

2/ Includes molds, stools, machinery, and buildings; excludes rerolling rails.

Table 5.-Consumption of iron and steel scrap at major consuming industries' plants
during December 1966, and consumption year to date, by grades
(Short tons)

Grades of scrap	Mfgrs. of steel ingots and castings	Mfgrs. of steel castings	Iron foundries and miscel- laneous users	Total consump- tion	Total consumption year to date
Steel scrap, excludes rerolling rails:					
Carbon-----	4,774,844	285,503	463,860	5,524,207	71,046,968
Alloy, excludes stainless-----	242,248	11,994	14,348	268,590	3,428,679
Stainless-----	71,074	2,967	2,605	76,646	969,693
Cast iron, includes borings-----	422,164	34,595	786,179	1,242,938	16,138,137
Total-----	5,510,330	335,059	1,266,992	7,112,381	91,583,477

Table 6.-Stocks of iron and steel scrap and pig iron on hand at major consuming industries' plants
at end of month
(Short tons)

Date	Scrap stocks				Pig iron stocks			
	Mfgrs. of steel ingots and castings	Mfgrs. of steel castings	Iron foundries and miscel- laneous users	Total	Mfgrs. of steel ingots and castings	Mfgrs. of steel castings	Iron foundries and miscel- laneous users	Total
July 31, 1966---	6,329,076	373,065	1,006,510	7,708,651	2,022,756	30,092	411,271	2,464,119
Aug. 31, 1966---	6,625,462	377,857	978,789	7,982,108	1,992,241	29,402	430,721	2,452,364
Sept. 30, 1966---	6,678,829	373,956	952,112	8,004,897	2,049,583	27,055	439,516	2,516,154
Oct. 31, 1966---	6,701,446	379,010	954,791	8,035,247	2,187,807	27,991	436,464	2,652,262
Nov. 30, 1966---	6,688,675	389,807	955,264	8,033,746	2,299,372	27,376	460,995	2,787,743
Dec. 31, 1966---	6,821,359	389,251	982,192	8,192,802	2,480,709	25,321	455,588	2,961,618

Table 7.-Pig iron stocks, production, receipts, consumption and shipments
(Short tons)

Date	Stocks at beginning of month <u>r</u> /	Produced during the month	Received during the month	Consumed during the month	Shipped to others during the month	Stocks at end of month
November 1966-----	2,658,648	7,503,208	630,876	7,383,748	621,241	2,787,743
December 1966-----	2,793,416	7,385,237	706,547	7,292,754	630,828	2,961,618

r/ Revised.

Table 8.-Consumers' receipts and total consumption of iron and steel scrap,
by grades, during December 1966
(Short tons)

Grades of scrap (Excludes rerolling rails)	Receipts during month			Total consumption
	From dealers	From others	Total	
Carbon steel:				
Low phosphorus plate and punchings----	236,883	73,698	310,581	368,779
Cut structurals and plate-----	105,062	1,575	106,637	107,471
Steel car wheels-----	10,143	114	10,257	12,250
No. 1 heavy melting-----	492,898	243,050	735,948	2,339,095
No. 1 and electric furnace bundles----	321,345	169,991	491,336	581,710
No. 2 and all other bundles-----	358,697	53,274	411,971	427,337
Turnings and borings-----	230,426	10,057	240,483	230,295
Slag scrap (Fe content)-----	27,181	55,788	82,969	281,949
All other carbon steel scrap-----	304,514	91,118	395,632	1,175,321
Alloy steel, excludes stainless-----	36,674	15,725	52,399	268,590
Stainless steel-----	25,211	5,289	30,500	76,646
Cast iron: Borings-----	54,008	17,498	71,506	100,024
All other cast iron scrap-----	303,320	82,934	386,254	1,142,914
Total-----	2,506,362	820,111	3,326,473	7,112,381

Table 9.-Consumers' production, receipts, consumption and stocks of iron and steel scrap, and consumption of pig iron in the United States, by districts and States, December 1966
(Short tons)

District and State	Home scrap produced	Total purchased scrap received ^{1/}	Consumption by grades					Scrap stocks	Pig iron consumption
			Carbon steel (excludes re-rolling rails)	Alloy steel (excludes stainless)	Stainless steel	Cast iron (includes borings)	Total scrap		
New England:									
Connecticut, Massachusetts, Rhode Island-----	22,066	28,328	17,213	1,018	2,329	27,217	47,777	51,839	11,792
Maine, New Hampshire, Vermont-----	1,712	2,320	1,215	-----	-----	3,003	4,218	2,733	926
Total-----	23,778	30,648	18,428	1,018	2,329	30,220	51,995	54,572	12,718
Middle Atlantic:									
New Jersey-----	18,104	41,947	33,151	728	382	23,966	58,247	85,856	7,001
New York-----	221,245	131,357	281,454	6,176	7,872	49,016	344,518	428,105	488,845
Pennsylvania (East) ^{2/} -----	299,131	218,975	355,363	62,487	3,633	46,796	468,279	714,332	541,546
Pennsylvania (West)-----	725,086	359,336	694,529	71,494	28,613	125,325	919,961	909,235	1,242,352
Total-----	1,263,566	751,615	1,364,497	140,885	40,500	245,123	1,791,005	2,137,528	2,279,744
East North Central:									
Illinois-----	423,375	402,237	582,905	16,444	4,867	125,346	729,562	1,006,781	568,874
Indiana-----	582,799	243,853	661,507	10,351	2,000	84,264	758,122	806,439	955,802
Michigan-----	369,088	320,096	456,155	3,380	8,172	218,847	686,554	441,991	652,861
Ohio (East) ^{3/} -----	588,766	450,873	750,101	70,744	10,048	112,272	943,073	807,705	924,289
Ohio (West)-----	186,166	119,906	181,267	857	-----	90,648	272,864	214,531	219,923
Wisconsin-----	54,578	44,888	53,398	406	340	39,602	93,746	46,581	18,263
Total-----	2,204,772	1,581,853	2,685,333	102,182	25,427	670,979	3,483,921	3,324,028	3,340,012
West North Central:									
Iowa-----	29,282	49,060	47,770	-----	✓/	22,282	70,065	73,892	6,438
Kansas and Nebraska-----	5,884	9,506	11,814	-----	✓/	4,036	15,850	6,303	550
Minnesota-----	21,604	25,645	31,598	1,234	✓/	13,442	45,669	60,469	54,721
Missouri-----	21,854	81,848	66,066	-----	✓/	14,554	81,327	185,837	3,306
Total-----	78,624	166,059	157,248	1,234	✓/	54,314	212,911	326,501	65,015
South Atlantic:									
Delaware and Maryland-----	195,341	27,778	173,429	1,357	6,409	16,429	197,624	401,880	413,801
Florida and Georgia-----	10,207	35,628	36,960	-----	-----	3,532	40,492	48,457	1,368
North Carolina and South Carolina-----	4,274	16,120	9,850	1,376	✓/	9,104	19,864	21,112	3,597
Virginia and West Virginia-----	85,480	97,708	168,313	-----	-----	21,239	190,118	129,293	200,664
Total-----	295,302	177,234	388,552	2,733	✓/	50,304	448,098	600,742	619,430
East South Central:									
Alabama-----	143,412	119,787	179,363	2,920	✓/	46,390	228,677	341,541	273,640
Kentucky, Mississippi, Tennessee-----	82,656	86,412	137,140	8,220	✓/	39,338	184,992	206,477	154,351
Total-----	226,068	206,199	316,503	11,140	✓/	85,728	413,669	548,018	427,991
West South Central:									
Arkansas, Louisiana, Oklahoma-----	7,301	23,119	21,857	2,376	-----	3,451	25,326	41,434	1,427
Texas-----	107,463	119,652	168,927	-----	✓/	38,949	210,763	281,349	114,801
Total-----	114,764	142,771	190,784	2,376	✓/	42,400	236,089	332,783	116,228
Rocky Mountain:									
Arizona, Colorado, Idaho, Montana, Nevada, Utah-----	114,927	63,805	146,797	4,316	-----	15,947	167,060	389,248	243,359
Total-----	114,927	63,805	146,797	4,316	-----	15,947	167,060	389,248	243,359
Pacific Coast:									
California and Hawaii-----	143,387	150,872	195,961	933	210	40,187	237,291	341,287	187,286
Oregon and Washington-----	14,868	55,417	60,104	1,773	729	7,736	70,342	148,095	971
Total-----	158,255	206,289	256,065	2,706	939	47,923	307,633	489,382	188,257
U.S. total-----	4,480,056	3,326,473	5,524,207	268,590	76,646	1,242,938	7,112,381	8,192,802	7,292,754

- ^{1/} Includes 534,524 short tons that was shipped, transferred or otherwise disposed of during the month.
^{2/} Pennsylvania is divided into East and West by the eastern boundary of the following counties: McKean, Cameron, Clearfield, Cambria, and Somerset.
^{3/} Ohio is divided into East and West by the eastern boundary of the following counties: Ottawa, Sandusky, Seneca, Crawford, Morrow, Delaware, Franklin, Pickaway, Ross, Pike, and Scioto.
^{4/} Figures withheld to avoid disclosing individual company confidential data; included in U.S. total.

CONSUMPTION OF IRON AND STEEL SCRAP AND PIG IRON

The average daily rate of consumption of scrap in December was 229,432 tons or 7 percent less than for the year 1965.

In December, open-hearth furnaces used 38 percent of the total scrap, and 54 percent of the pig iron compared with 40 and 56 percent, respectively, in November; electric furnaces in December used 11 percent of the combined total of iron and steel scrap and pig iron charged to all furnaces, with open-hearth using 46 percent. During 1965, these percentages were 10 and 59 percent, respectively. Blast furnaces used 6 percent of the total scrap; the corresponding percentage for the year 1965 was 6.

During December, steelmaking furnaces (open-hearth, Bessemer, basic oxygen converter, and electric) accounted for 75 percent of the total scrap, and 92 percent of the pig iron consumed, the same as during November. In 1965, steelmaking furnaces used 76 percent of the total scrap, and 91 percent of the pig iron. The remainder was used in ironmaking furnaces, principally the cupola. Consumption by type of furnace during December is shown in the following table:

Table 10.-Consumption of iron and steel scrap, and pig iron, by type of manufacturers and furnaces during December 1966
(Short tons)

Type of furnace or equipment	Steel ingots and castings ^{1/}		Steel castings ^{2/}		Iron foundries and miscellaneous users		Total	
	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iron
Basic oxygen converters ^{3/}	1,083,530	2,681,916	-----	-----	-----	-----	1,083,530	2,681,916
Bessemer converters	-----	11,191	380	-----	6,168	1,411	6,548	12,602
Open-hearth furnaces	2,676,541	3,937,316	57,347	9,116	-----	-----	2,733,888	3,946,432
Electric furnaces ^{4/}	1,232,168	42,114	221,664	3,356	33,050	3,926	1,486,882	49,396
Total steelmaking furnaces	4,992,239	6,672,537	279,391	12,472	39,218	5,337	5,310,848	6,690,346
Blast furnaces ^{5/}	410,666	-----	-----	-----	-----	-----	410,666	-----
Cupola furnaces	99,160	22,428	32,623	1,050	1,066,333	260,535	1,198,116	284,013
Air furnaces	4,455	1,145	23,045	2,991	108,405	9,557	135,905	13,693
Direct castings	-----	248,605	-----	-----	-----	56,097	-----	304,702
Ferroalloy	-----	-----	-----	-----	42,555	-----	42,555	-----
Miscellaneous	3,810	-----	-----	-----	10,481	-----	14,291	-----
Total December 1966	5,510,330	6,944,715	335,059	16,513	1,266,992	331,526	7,112,381	7,292,754
Total November 1966	5,894,137	7,024,245	316,548	15,989	1,295,987	343,514	7,506,672	7,383,748
Total October 1966	6,147,586	7,556,926	323,093	15,951	1,338,831	370,603	7,809,510	7,943,480
Total September 1966	5,983,395	7,410,686	326,173	15,400	1,367,608	371,468	7,677,176	7,797,554
Total August 1966	5,958,833	7,341,438	302,946	16,338	1,236,054	375,788	7,497,833	7,733,564
Total July 1966	5,510,106	7,281,442	255,628	11,286	1,029,268	303,360	6,795,002	7,596,088

^{1/} Includes only those castings made by companies producing steel ingots. ^{2/} Excludes companies that produce steel castings and steel ingots. ^{3/} Includes scrap and pig iron processed in metallurgical blast cupola and used in oxygen converters.

^{4/} Includes crucible furnaces. ^{5/} Includes consumption in all blast furnaces producing pig iron.

Table 11.-Consumption of iron and steel scrap and pig iron in open-hearth
furnaces in the United States, by districts and States,
during December 1966
(Short tons)

District and State	Scrap	Pig iron	Total charge
New England and Middle Atlantic:			
New York and Rhode Island-----	126,997	143,647	270,644
Pennsylvania (East)-----	264,508	487,139	751,647
Pennsylvania (West)-----	470,099	795,820	1,265,919
Total-----	861,604	1,426,606	2,288,210
East North Central:			
Illinois-----	250,006	360,877	610,883
Indiana-----	479,050	478,651	957,701
Michigan and Wisconsin-----	70,759	76,353	147,112
Ohio (East)-----	320,724	417,882	738,606
Ohio (West)-----	123,123	207,989	331,112
Total-----	1,243,662	1,541,752	2,785,414
West North Central:			
Minnesota and Missouri-----	30,990	50,874	81,864
Total-----	30,990	50,874	81,864
South Atlantic:			
Delaware, Maryland, West Virginia-----	224,178	425,868	650,046
Total-----	224,178	425,868	650,046
East and West South Central:			
Alabama, Kentucky, Texas-----	194,064	271,201	465,265
Total-----	194,064	271,201	465,265
Rocky Mountain and Pacific Coast:			
California, Colorado, Utah-----	179,390	230,131	409,521
Total-----	179,390	230,131	409,521
U.S. total-----	2,733,888	3,946,432	6,680,320

FOREIGN TRADE

Exports of iron and steel for the year declined by 7 percent in tonnage and 13 percent in value compared with 1965. Shipments to Japan increased by 29 percent over 1965, but were less than for 1964. The average export scrap value for 1966 was \$29.86 compared with \$32.08 in 1965, although prices firmed up during the latter half of 1966, and averaged \$32.50 in December.

In December exports of iron and steel scrap totaled 461,797 short tons compared with 492,651 tons for November. Exports of pig iron during December totaled 2,696 tons and 160 tons in November. Imports of scrap totaled 18,678 short tons during December compared with 18,699 tons in November. Of the scrap imported 18,468 short tons came from Canada and 210 tons from other sources. Imports of pig iron totaled 41,792 short tons in December and 136,221 tons in November. In addition to the foregoing imports of pig iron, there were 449 tons of sponge iron, valued at \$74,234, imported, all of which came from Canada.

Table 12.-U.S. exports of iron and steel scrap, by countries

Country	December 1966		Jan. through Dec. 1966	
	Short tons	Value	Short tons	Value
Argentina-----	-----	-----	22,214	\$668,605
Canada-----	39,855	\$1,070,037	739,442	21,338,602
France-----	5	940	8,712	380,505
Germany, West-----	-----	-----	14,709	532,786
Italy-----	15,731	365,346	321,610	8,831,052
Japan-----	304,661	10,056,194	3,079,256	87,879,547
Korea-----	22,328	799,931	279,410	9,763,698
Mexico-----	60,611	2,015,613	779,602	25,165,969
Spain-----	11	1,877	84,759	2,040,444
Sweden-----	73	10,534	45,834	2,367,375
Taiwan-----	4,087	270,883	127,730	5,168,474
All others-----	14,435	417,623	268,977	8,224,987
Total-----	461,797	15,008,978	5,772,255	172,362,044

Table 13.-U.S. exports of iron and steel scrap, by grades

Grades of scrap	December 1966		Jan. through Dec. 1966	
	Short tons	Value	Short tons	Value
No. 1 heavy melting steel scrap---	168,109	\$5,519,387	2,210,269	\$69,703,510
No. 2 heavy melting steel scrap---	92,024	2,568,676	964,911	26,261,422
No. 1 bundles-----	11,940	333,570	215,247	6,939,882
No. 2 bundles-----	84,000	1,818,015	1,225,917	26,388,839
Borings, shovelings, and turnings-	45,932	925,085	377,223	7,989,050
Iron scrap-----	14,158	464,664	260,490	7,716,114
Stainless steel scrap-----	7,403	2,058,940	40,092	10,208,260
All other scrap <u>1</u> /-----	38,231	1,320,641	478,106	17,154,967
Total-----	461,797	15,008,978	5,772,255	172,362,044

1/ Includes tin plate and terne plate.