ALUMINUM

By Patricia A. Plunkert

Domestic primary aluminum production increased slightly in 1995, to 3.4 million metric tons. Thirteen companies operated 22 primary aluminum reduction plants and 1 plant remained temporarily closed. Montana, Oregon, and Washington accounted for 36% of the production; Kentucky, North Carolina, South Carolina, and Tennessee, 21%; and other States, 43%. The value of primary metal produced domestically in 1995 was estimated at $6.4 billion. As the year drew to a close, some domestic producers began to announce the gradual reopening of smelter capacity that had been temporarily closed.

Aluminum recovered from purchased scrap increased to approximately 3.2 million tons. Fifty-three percent of this recovered metal came from new (manufacturing) scrap and 47% from old scrap (discarded aluminum products). The recycling rate for aluminum used beverage can (UBC) scrap decreased slightly to 62.2%.

Transportation and the container and packaging industries remained the dominant domestic markets for aluminum products in 1995. The transportation industry accounted for an estimated 32% of domestic consumption; containers and packaging, 28%; building and construction, 15%; electrical and consumer durables, 8% each; and other uses, 9%.

U.S. imports for consumption decreased in 1995, reversing an upward trend that began in 1992. Imports from Russia and other countries of the former U.S.S.R. also decreased for the first time in 3 years. Total exports from the United States continued to increase in 1995, reaching their highest level since 1991.

The price of primary aluminum ingot on both the domestic and the international markets fluctuated during the year but followed a general downward trend. Even so, the annual average price of primary ingot was substantially higher than in 1994. Prices in the aluminum scrap markets paralleled the general trend of primary ingot prices during the year.

World inventory levels at the end of the year were lower. Inventories held by the London Metal Exchange (LME) continued to decrease dramatically during the year, dropping by about 1 million tons. Producer stocks, as reported by the International Primary Aluminium Institute (IPAI), decreased slightly in 1995. U.S. inventories also decreased slightly during the year.

Primary aluminum was produced in 44 countries in 1995. The United States was the largest producer with 17% of the world total, followed by Russia with 14%, and Canada with 11%. World metal production increased slightly compared with that of 1994.

Legislation and Government Programs

The U.S. Environmental Protection Agency (EPA), in conjunction with the domestic primary aluminum industry, developed a voluntary program aimed at reducing the emission of greenhouse gases by aluminum smelters. Members of the Voluntary Aluminum Industrial Partnership (VAIP) committed to reducing the emission of perfluorocarbons and to providing data to EPA that tracks their progress toward reduction targets.[1]

Production

Primary.—Domestic primary aluminum production, totaling 3,375,075 tons, increased 2% compared with 1994 production. Production figures were obtained from the 13 domestic producers, all of whom responded to the U.S. Geological Survey's (USGS) request for data.

New labor contracts were signed at four domestic smelters. Workers at Columbia Falls Aluminum Co.'s Montana smelter signed a 4-year labor agreement, effective October 17. The new contract reportedly replaced the profit-sharing plan of the previous contract with a new package that included increased wages and benefits and a substantial signing bonus.[2] Alcan Aluminium Ltd. and the Aluminum, Brick, and Glass Workers International Union reported the ratification of a new 4-year labor contract covering workers at the Sebree, KY, smelter. The contract reportedly contained a $1,500 signing bonus and, in later years of the contract, additional bonuses related to the price of aluminum. The contract, which will extend to October 28, 1999, also included base wage increases as well as improvements in the benefits package.[3] Kaiser Aluminum & Chemical Corp. and the United Steel Workers of America ratified a new labor contract covering workers at the primary aluminum smelters in Mead and Tacoma, WA; the rolling mill at Trentwood, WA; the rod and bar plant at Newark, OH; and the alumina refinery at Gramercy, LA. The new contract runs through September 30, 1998.[4]

Alumax Inc. announced the sale of a portion of its primary aluminum smelters in Frederick, MD, and Ferndale, WA, to a consortium led by a subsidiary of Mitsui & Co., Ltd. The consortium acquired an additional 14% interest in each of the plants, bringing its total interest to 39% in each of the plants. Alumax, holding a 61% majority interest in both plants, will continue to operate them.[5] *(See tables 1 and 2.)*

Secondary.—Metal recovered from both new and old scrap reached a historic high of approximately 3.2 million tons in 1995, according to data derived by the USGS from its "Aluminum Scrap" survey. Of the 88 companies and/or plants

to which monthly or annual survey requests were sent, 70 responded, representing 88% of the total scrap consumed shown in table 4.

According to figures released by the Aluminum Association Inc., the Can Manufacturers Institute, and the Institute of Scrap Recycling Industries Inc., 62.7 billion aluminum beverage cans were recycled in the United States during 1995. The recycling rate, based on the number of cans shipped during the year, was 62.2%, a modest decrease from the 65.4% recycling rate in 1994. According to the organizations' joint press release, aluminum beverage cans produced domestically in 1995 had an average 51.3% post-consumer recycled content, the highest percentage recycled content of all recyclable packaging materials.

Alreco Metals announced the closure and filing for Chapter 11 bankruptcy protection of its secondary smelter in Benton Harbor, MI. The smelter reportedly had a casting alloy production capacity of 5,400 to 5,900 tons per month, the fifth largest supplier in the country.[6]

IMCO Recycling Inc. announced several acquisitions and expansion programs during the year that increased the company's total recycling capacity to about 820,000 tons (1.8 billion pounds) per year of scrap. The company announced plans to upgrade and expand its Loudon, TN, aluminum UBC recycling plant to an annual capacity of 81,600 tons (180 million pounds). IMCO also announced the acquisition of Ravenswood Aluminum Corp.'s 68,000-ton-per-year (150-million-pound-per-year) aluminum UBC recycling plant in Bedford, IN. IMCO announced the purchase of Alumar Associates, Inc., which owned Metal Mark, an operator of four aluminum scrap processing plants that serviced the automotive industry. Later in the year, IMCO and Alchem Aluminum Inc. announced plans to build a new secondary aluminum smelter in the Midwest to supply metal for the automotive market. The $10-million plant, scheduled to open at the end of 1996, had a planned annual capacity of 68,000 tons (150 million pounds).[7]

Alcan Aluminum Corp. announced the completion of expansions at its Oswego, NY, aluminum UBC recycling plant. The plant is now capable of melting more than 5 billion UBC's per year.[8]

IMCO announced plans to construct a facility adjacent to its Morgantown, KY, recycling plant to recover aluminum metal from salt cake, a byproduct of recycling. IMCO also announced that it was developing a new process to recover salts from the salt cake. The process reportedly would derive a fertilizer, with the test name "K-Soil", from the salt cake.[9] *(See tables 3, 4, and 5.)*

Consumption

The transportation industry, representing 27% of total U.S. shipments of aluminum products, remained the largest domestic consumer of aluminum. Automotive uses in passenger cars and light trucks dominated the increase in aluminum consumed by this sector of the market.

Alumax announced plans for the construction of a $23.6 million auto parts plant in Bentonville, AR. The facility, which will use semisolid metal forging (SSF) technology, is being built to complement Alumax's current SSF operations by expanding the range of manufacturing capabilities and available part sizes. The plant was expected to be operational in early 1996.[10]

Reynolds Metals Co. reported that commercial production had begun at its aluminum wheel plant in Beloit, WI. This plant was the company's first in the United States and supplied cast aluminum wheels for the Ford Taurus and F-series pick-up trucks.[11]

Aluminum Co. of America (Alcoa) and CMI International Inc. announced the formation of a new joint-venture company, A-CMI. A-CMI was expected to build a number of plants that would produce castings and forgings for the automotive industry. The first U.S. facility would be in Fruitport, MI.[12]

Reynolds announced plans to close its 1-billion-can-per-year aluminum beverage can manufacturing plant in Fulton, NY. The plant's primary customer had been the local Miller Brewing Co. brewery that closed in 1994. Reynolds also announced plans to cut the number of can lines at its 2-billion-can-per-year plant in Torrance, CA, from six lines to three lines. The company cited a geographic shift in customer demand and slower overall growth as reasons for its decision.[13] *(See tables 6 and 7.)*

Stocks

Inventories of aluminum ingot, mill products, and scrap at reduction and other processing plants, as reported by the U.S. Department of Commerce, decreased from 2.07 million tons at yearend 1994 to 2.0 million tons at yearend 1995.

The LME reported that its U.S. warehouses held a total of about 13,800 tons of primary aluminum metal ingot at yearend 1995, a slight decrease from the approximately 16,500 tons of metal reportedly held in these warehouses at yearend 1994. The LME also reported that aluminum alloy ingot at its U.S. warehouses at yearend 1995 totaled about 30,900 tons, a dramatic increase from the 1,100 tons of alloy held at yearend 1994.

There were no releases of aluminum metal from the National Defense Stockpile during the year, and the inventory level remained at 57,000 tons.

Prices

The monthly average U.S. market price of primary aluminum metal, as reported by Platt's Metals Week, fluctuated during the year but followed a general downward trend. The monthly average price began the year at a high of 99.7 cents per pound and posted a low of 77.2 cents per pound in November. The average price for the year was 85.878 cents per pound, a substantial increase compared with the 1994 average annual price of 71.165 cents per pound.

The LME cash price for high-grade primary aluminum ingot followed the same general trend as the U.S. market price. However, the spread between the U.S. market price and the

LME price narrowed during the course of the year. In January, the U.S. market price was about 6 cents per pound higher than the LME price. By December, the difference had narrowed to about 3 cents per pound. The 1995 average annual LME cash price was 81.904 cents per pound.

Purchase prices for aluminum scrap, as quoted by American Metal Market (AMM), followed the trend of primary ingot prices and closed the year at significantly lower levels than those at the beginning of the year. The yearend price ranges for selected types of aluminum scrap were as follows: mixed low-copper-content aluminum clips, 55 to 56 cents per pound; old sheet and cast, 49.5 to 50.5 cents per pound; and clean, dry aluminum turnings, 49.5 to 50.5 cents per pound. Prices for aluminum UBC's also trended downward during the year. Aluminum producers' buying price range for processed and delivered UBC's, as quoted by AMM, began the year at 70 to 72 cents per pound. The price range at the end of the year was 58 to 60 cents per pound.

The yearend indicator prices, as published by AMM, for selected secondary aluminum ingots also decreased compared with those of 1994 and were as follows: alloy 380 (1% zinc content), 82.06 cents per pound; alloy 360 (0.6% copper content), 86.43 cents per pound; alloy 413 (0.6% copper content), 86.39 cents per pound; and alloy 319, 84.83 cents per pound. Metals Week published an annual average U.S. price of 80.5 cents per pound for A-380 alloy (3% zinc content). The average annual LME cash price for a similar aluminum 380 alloy was 75.1 cents per pound.

Foreign Trade

Total exports of aluminum from the United States continued to increase in 1995, reaching their highest level since 1991. The increase was led by significant improvement in the level of exports of semifabricated aluminum and scrap. Canada, Japan, Mexico, and Taiwan, in decreasing order of shipments, accounted for more than two-thirds of total U.S. exports.

Imports for consumption decreased in 1995, reversing an upward trend that began in 1992. Although imports of semifabricated materials and scrap increased, crude metal and alloys imports decreased significantly compared with those of 1994. Canada remained the major shipping country to the United States, supplying over 60% of total imports. Russia remained the second largest supplier of aluminum materials; however, total imports from Russia decreased for the first time in 3 years. *(See tables 8, 9, 10, and 11.)*

World Review

World production of primary aluminum metal increased slightly in 1995. World inventories continued to fall, and the reduction of inventories at the LME appeared to have bottomed out at about 0.5 million tons. World metal prices fluctuated during the year but exhibited a general downward trend. Large quantities of aluminum continued to be exported by Russia. However, most of this metal appeared to have been absorbed by the market, since there was no large buildup in reported world stock levels.

Unwrought primary aluminum inventories held by members of the IPAI decreased from 2.06 million tons at yearend 1994 to 1.99 million tons at yearend 1995. IPAI also reported that total metal inventories, including secondary aluminum, held by its members decreased slightly from 3.58 million tons at yearend 1994 to 3.56 million tons at yearend 1995.

Inventories of primary aluminum metal held by the LME continued to decrease dramatically in 1995, despite a slight upturn during the last 2 months of the year. By the end of the year, inventory levels had dropped to 584,000 tons, approximately 1 million tons lower than that at the beginning of the year and more than 2 million tons lower than the record high inventory of 2.66 million tons reported in May 1994. *(See table 12.)*

Australia.—According to Comalco Ltd.'s 1995 company annual report, work began on a third potline at its Boyne Island smelter. Construction of the 217,000-ton-per-year line was expected to be completed in 1997.

RTZ Corp. Plc. and CRA Ltd. agreed to combine their businesses in a dual listed companies merger, in which corporate identities and separate share listings would be retained, but the boards of directors and management structures would be unified. The name of the company, RTZ-CRA, would eventually be changed, but this was not a high priority.[14]

Bahrain.—Aluminium Bahrain BSC announced plans to add another 36,500 tons per year of primary aluminum smelting capacity. This expansion, expected to be completed in mid-1997, would bring the annual capacity for this, the Middle East's largest smelter, to just under 500,000 tons.[15]

Canada.—According to the company's annual report, Reynold's acquired an additional 24.95% interest in the Bécancour primary aluminum smelter from Société Générale de Financement du Quebec, increasing Reynold's interest to 50%. The acquisition provides Reynold's with an additional 93,000 tons of annual primary aluminum output.

China.—Kaiser and the China National Nonferrous Metals Industry Corp. (CNNC) reached agreement on an aluminum smelter joint venture that reportedly would represent the first large-scale privatization in the Chinese aluminum smelting industry. The proposed joint venture, Yellow River Aluminum Industry Co., would include the 55,000-ton-per-year Lanzhou smelter, the 30,000-ton-per-year Lianhai smelter, and a planned 30,000-ton-per-year expansion of the Lianhai smelter. Ownership of the joint venture would be 51% Lanzhou/CNNC and 49% Kaiser Yellow River Investment Ltd., a subsidiary of Kaiser.[16]

Dubai.—Dubai Aluminium Co. announced plans to increase capacity at its primary aluminum smelter from its current 245,000 tons per year to 373,000 tons per year by 1997. The project included the construction of a fifth potline, which would house 240 pots and use technology developed at the smelter.[17]

Germany.—VAW Aluminium AG announced plans to permanently close the Toeging primary aluminum smelter in

southern Germany by yearend. The smelter had an engineered capacity of 90,000 tons per year.[18]

Iceland.—Alusuisse-Lonza Holding AG announced plans to increase capacity at its primary aluminum smelter in Straumsvik at a cost of $220 million. The smelter was to be expanded from 100,000 tons per year to 162,000 tons per year with the additional capacity expected to come on-stream by late 1997.[19]

Iran.—Despite delays, work on the 220,000-ton-per-year greenfield primary aluminum smelter in Bandar Abbas continued. Construction of Phase 1, a 110,000-ton-per-year potline, was reportedly well advanced. Most observers, however, felt that completion of the project was still several years away.[20]

Italy.—According to Alcoa's 1995 annual report, the company announced plans to acquire the principal operating assets of Alumix S.p.A., Italy's state-owned integrated aluminum producer. The purchase included two primary aluminum smelters, at Portovesme and Fusina, with a combined annual capacity of 170,000 tons; Alumix's 6% interest in Halco Mining, an international bauxite mining venture; fabrication plants; distribution centers; and European sales offices. The transaction was expected to be completed during the first part of 1996.

New Zealand.—According to Comalco's 1995 annual report, work proceeded on the upgrade of its primary aluminum smelter at Tiwai Point. Commissioning of 48 new cells was scheduled for May 1996. Upon completion of the project by the end of 1996, annual production capacity at the plant would increase by more than 40,000 tons to a total of 313,000 tons.

Norway.—Norsk Hydro A/S announced a plan to expand capacity at its Ardal smelter by 50,000 tons to an annual capacity of more than 240,000 tons. The expansion plan had two phases. Phase 1, which could be completed as early as 1996, involved the installation of 26 new cells in the existing potroom that would increase production by 12,000 tons per year. A feasibility study for Phase 2, which involved the replacement of existing Soderberg technology with prebaked technology, was begun.[21]

Slovakia.—Slovalco commissioned a new 108,000-ton-per-year primary aluminum smelter at Ziar nad Hronom in west-central Slovakia. This smelter would replace the original two-line, 70,000-ton-per-year, 1953-vintage smelter that was operating on the site. Obsolete technology and severe pollution were behind the decision made 10 years ago to replace the smelter.[22]

South Africa.—According to Gencor's 1995 company annual report, Alusaf Ltd. commissioned and began production at its new 466,000-ton-per-year Hillside smelter at Richards Bay. The smelter was expected to reach full production in mid-1996. Alusaf also announced that the environmental upgrade of Potroom A at its 170,000-ton-per-year Bayside smelter, also at Richards Bay, was expected to be completed by yearend. A proposed modernization and expansion of Potrooms B and C at Bayside, which could add 40,000 tons per year of capacity, was under study.

Outlook

Demand for aluminum during the first part of 1996 was weak in response to the general lackluster growth in the U.S. economy. Prices both in the U.S. and world markets were relatively stable during the first half of 1996, even though inventories had begun to increase. As of the date of this report, LME inventories were approaching the 1 million ton level. World producers are slowly bringing back on-stream primary metal production capacity that had been temporarily closed over the last few years. Worldwide aluminum demand was anticipated to continue to grow slowly.

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[5]Alumax Inc. Alumax News. Alumax Sells Part Interest in Intalco, Eastalco Primary Aluminum Plants. Mar. 31, 1995, 1 p.

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[18]Penson, S. VAW Approves Shuttering Toeging Aluminum Smelter. Am. Met. Mark., v. 103, No. 60, Mar. 29, 1995, p. 8.

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TABLE 1
SALIENT ALUMINUM STATISTICS 1/

(Thousand metric tons unless otherwise specified)

	1991	1992	1993	1994	1995
United States:					
Primary production	4,121	4,042	3,695	3,299	3,375
Value (million dollars)	$5,400	$5,130	$4,340	$5,180	$6,390
Price: (average cents per pound)					
U.S. market (spot)	59.5	57.5	53.3	71.2	85.9
Inventories (December 31)					
Aluminum industry 2/	1,780	1,880	1,980	2,070	2,000
LME stocks in U.S. warehouses	168	214	168	16	14
National Defense Stockpile	2	57	57	57	57
Secondary recovery 3/	2,290	2,760	2,940	3,090 r/	3,190
New scrap	969	1,140	1,310	1,580	1,680
Old scrap	1,320	1,610	1,630	1,500	1,510
Exports (crude and semicrude)	1,760	1,450	1,210	1,370	1,610
Imports for consumption (crude and semicrude)	1,490	1,730	2,540	3,380	2,970
Aluminum industry shipments 4/	6,400	6,810	7,300	8,160	8,250
Supply, apparent 5/	6,010	6,870	7,920	8,460	8,010
Consumption, apparent 6/	5,040	5,730	6,600	6,880	6,320
World: Production	19,700 r/	19,500	19,800 r/	19,200 r/	19,400 e/

e/ Estimated. r/ Revised.

1/ Data are rounded to three significant digits, except "Primary production."

2/ Includes ingot, semifabricated material, and scrap. Data from Current Industrial Reports, Series M33-D, U. S. Department of Commerce, Bureau of the Census.

3/ Metallic recovery from purchased, tolled, or imported new and old scrap expanded for full industry coverage.

4/ Shipped to domestic industry.

5/ Defined as domestic primary metal production + secondary recovery + imports - exports + adjustments for Government and industry stock changes.

6/ Apparent supply less recovery from purchased new scrap.

TABLE 2
PRIMARY ANNUAL ALUMINUM PRODUCTION CAPACITY IN THE UNITED STATES, BY COMPANY 1/

Company	Yearend capacity (thousand metric tons) 1994	1995	1995 ownership (percent)
Alcan Aluminum Corp.:			
Sebree, KY	186 r/	186	Alcan Aluminum Ltd., 100%.
Alumax Inc.:			
Ferndale, WA (Intalco)	275	275	Alumax Inc., 61%; Mitsui & Co., 23%; TosTem Corp., 9%; YKK Corp., 7%.
Frederick, MD (Eastalco)	174 r/	174	Do.
Mount Holly, SC	184	184	Alumax, 73%; Glencore International AG., 27%.
Total	633 r/	633	
Aluminum Co. of America: 2/			
Alcoa, TN	210	210	Aluminum Co. of America, 100%.
Badin, NC	115	115	Do.
Evansville, IN (Warrick)	300	300	Do.
Massena, NY	125	125	Do.
Rockdale, TX	315	315	Do.
Wenatchee, WA	220	220	Do.
Total	1,290	1,290	
Columbia Aluminum Corp.:			
Goldendale, WA	168	168	Columbia Aluminum Corp., 70%; employees, 30%.
Columbia Falls Aluminum Co.:			
Columbia Falls, MT	168	168	Montana Aluminum Investors Corp., 100%.
Kaiser Aluminum & Chemical Corp.:			
Mead, WA (Spokane)	200	200	MAXXAM Inc., 100%.
Tacoma, WA	73	73	Do.
Total	273	273	
NSA:			
Hawesville, KY	188 r/	188	Southwire Co., 100%.
Noranda Aluminum Inc.:			
New Madrid, MO	215	215	Noranda Mines Ltd., 100%.
Northwest Aluminum Corp.:			
The Dalles, OR	82	82	Private interests, 100%.
Ormet Corp.:			
Hannibal, OH	254 r/	254	Ohio River Associates Inc., 100%.
Ravenswood Aluminum Corp.:			
Ravenswood, WV	168	168	Glencore International AG, 100%.
Reynolds Metals Co.:			
Longview, WA	204	204	Reynolds Metals Co., 100%.
Massena, NY	123	123	Do.
Troutdale, OR	121	121	Do.
Total	448	448	
Vanalco Inc.:			
Vancouver, WA	116	116	Vanalco Inc., 100%.
Grand total	4,180 r/	4,180	

r/ Revised.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Individual plant capacities are estimates based on company reported total.

TABLE 3
U.S. CONSUMPTION OF AND RECOVERY FROM PURCHASED NEW AND OLD ALUMINUM SCRAP, 1/ BY CLASS 2/

(Metric tons)

Class	Consumption	Calculated recovery	
		Aluminum	Metallic
1994:			
Secondary smelters	1,150,000	888,000 r/	953,000 r/
Integrated aluminum companies	1,340,000	1,120,000	1,190,000
Independent mill fabricators	728,000	628,000	670,000
Foundries	103,000	83,700	90,100
Other consumers	10,900	10,900	10,900
Total	3,340,000	2,730,000	2,920,000 r/
Estimated full industry coverage	3,530,000	2,890,000 r/	3,090,000 r/
1995:			
Secondary smelters	1,300,000	978,000	1,050,000
Integrated aluminum companies	1,400,000	1,160,000	1,240,000
Independent mill fabricators	676,000	585,000	625,000
Foundries	102,000	84,000	90,300
Other consumers	10,800	9,570	9,600
Total	3,480,000	2,820,000	3,010,000
Estimated full industry coverage	3,690,000	2,980,000	3,190,000

r/ Revised.

1/ Excludes recovery from other than aluminum-base scrap.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4
U.S. STOCKS, RECEIPTS, AND CONSUMPTION OF PURCHASED NEW AND OLD ALUMINUM SCRAP 1/ AND SWEATED PIG IN 1995 2/

(Metric tons)

Class of consumer and type of scrap	Stocks, Jan. 1	Net receipts 3/	Consump-tion	Stocks, Dec. 31
Secondary smelters:				
New scrap:				
Solids	4,680 r/	179,000	177,000	7,090
Borings and turnings	5,030 r/	204,000	204,000	4,450
Dross and skimmings	3,000	209,000	208,000	3,730
Other 4/	4,850	205,000	207,000	2,730
Total	17,600 r/	797,000	796,000	18,000
Old scrap:				
Castings, sheet, clippings	17,000 r/	321,000	324,000	13,900
Aluminum-copper radiators	766 r/	10,300	10,200	894
Aluminum cans 5/	1,680	118,000	119,000	1,390
Other 6/	453	44,500	44,500	443
Total	19,900 r/	494,000	497,000	16,600
Sweated pig	504	6,250	4,340	2,410
Total secondary smelters	37,900 r/	1,300,000	1,300,000	37,000
Integrated aluminum companies, foundries, independent mill fabricators, other consumers:				
New scrap:				
Solids	19,600	779,000	783,000	15,600
Borings and turnings	365	31,300	31,600	27
Dross and skimmings	89	15,900	15,900	136
Other 4/	9,320	197,000	198,000	8,330
Total	29,400	1,020,000	1,030,000	24,100
Old scrap:				
Castings, sheet, clippings	9,080	328,000	329,000	8,020
Aluminum-copper radiators	372 r/	2,490	2,710	157
Aluminum cans	22,600	811,000	799,000	34,600
Other 6/	155	14,400	14,200	340
Total	32,300	1,160,000	1,150,000	43,200
Sweated pig	393	10,400	10,300	421
Total integrated aluminum companies, etc.	62,000	2,190,000	2,180,000	67,700
All scrap consumed:				
New scrap:				
Solids	24,300	958,000	959,000	22,700
Borings and turnings	5,390 r/	235,000	236,000	4,480
Dross and skimmings	3,090	225,000	224,000	3,860
Other 4/	14,200	402,000	405,000	11,100
Total	46,900 r/	1,820,000	1,820,000	42,100
Old scrap:				
Castings, sheet, clippings	26,100 r/	649,000	653,000	21,900
Aluminum-copper radiators	1,140 r/	12,800	12,900	1,050
Aluminum cans	24,300	930,000	918,000	36,000
Other 6/	608	58,900	58,700	783
Total	52,100 r/	1,650,000	1,640,000	59,800
Sweated pig	897	16,600	14,700	2,830
Total of all scrap consumed	100,000 r/	3,490,000	3,480,000	105,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes imported scrap. According to reporting companies, 13.4% of total receipts of aluminum-base scrap, or 467,000 metric tons, was received on toll arrangements.

3/ Includes inventory adjustment.

4/ Includes data on foil, can stock clippings, and other miscellaneous.

5/ Used beverage cans toll treated for primary producers are included in secondary smelter tabulation.

6/ Includes municipal wastes (includes litter) and fragmentized scrap (auto shredder).

TABLE 5
PRODUCTION AND SHIPMENTS OF SECONDARY ALUMINUM ALLOYS BY
INDEPENDENT SMELTERS IN THE UNITED STATES 1/

(Metric tons)

	1994		1995	
	Production	Net shipments 2/	Production	Net shipments 2/
Diecast alloys:				
13% Si, 360, etc. (0.6% Cu, maximum)	50,500	51,100 r/	49,600	49,700
380 and variations	561,000 r/	562,000 r/	570,000	569,000
Sand and permanent mold:				
95/5 Al-Si, 356, etc. (0.6% Cu, maximum)	84,700 r/	84,400 r/	12,900	12,500
No. 12 and variations	W	W	W	W
No. 319 and variations	73,600 r/	74,300 r/	86,400	85,600
F-132 alloy and variations	29,000	29,000	30,900	31,100
Al-Mg alloys	639	639	639	639
Al-Zn alloys	3,530	3,530	2,200	2,160
Al-Si alloys (0.6% to 2.0% Cu)	10,800	10,700	10,900	10,900
Al-Cu alloys (1.5% Si, maximum)	1,680	1,710	977	980
Al-Si-Cu-Ni alloys	1,180	1,230	1,060	1,060
Other	1,040 r/	1,070 r/	4,280	3,980
Wrought alloys: Extrusion billets	157,000 r/	158,000 r/	163,000	163,000
Miscellaneous:				
Steel deoxidation	--	--	--	--
Pure (97.0% Al)	--	--	--	--
Aluminum-base hardeners	93	93	5,380	4,610
Other 3/	35,700	35,000	39,600	38,500
Total	1,010,000 r/	1,010,000 r/	978,000	973,000
Less consumption of materials other than scrap:				
Primary aluminum	87,000 r/	--	41,800	--
Primary silicon	67,500	--	74,600	--
Other	6,260 r/	--	3,730	--
Net metallic recovery from aluminum scrap and sweated pig consumed in production of secondary aluminum ingot 4/	850,000 r/	XX	858,000	XX

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Sand and permanent mold: Other." XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes inventory adjustment.

3/ Includes other die-cast alloys and other miscellaneous.

4/ No allowance made for melt-loss of primary aluminum and alloying ingredients.

TABLE 6
DISTRIBUTION OF END-USE SHIPMENTS OF ALUMINUM PRODUCTS IN THE UNITED STATES, BY INDUSTRY 1/

Industry	1994 Quantity (thousand metric tons)	1994 Percent of grand total	1995 Quantity (thousand metric tons)	1995 Percent of grand total
Containers and packaging	2,270 r/	24.3 r/	2,310	24.1
Building and construction	1,400	15.0	1,220	12.7
Transportation	2,310	24.7	2,600	27.2
Electrical	682 r/	7.3 r/	657	6.9
Consumer durables	647	6.9	621	6.5
Machinery and equipment	572	6.1	569	6.0
Other markets	276	2.9	279	2.9
Total to domestic users	8,160	87.2	8,250	86.3
Exports	1,200	12.8	1,310	13.7
Grand total	9,360	100.0	9,560	100.0

r/ Revised.
1/ Data are rounded to three significant digits; may not add to totals shown.

Source: The Aluminum Association Inc.

TABLE 7
U.S. NET SHIPMENTS 1/ OF ALUMINUM WROUGHT AND CAST PRODUCTS, BY PRODUCERS 2/

(Thousand metric tons)

	1994	1995 p/
Wrought products:		
Sheet, plate, foil	4,810 r/	4,540
Rod, bar, pipe, tube, shapes	1,420 r/	1,480
Rod, wire, cable	296 r/	352
Forgings (including impacts)	98 r/	103
Powder, flake, paste	66 r/	60
Total	6,690 r/	6,540
Castings:		
Sand	208	NA
Permanent and semipermanent mold	247	NA
Die	551	NA
Other	42	NA
Total	1,050	NA
Grand total	7,740	NA

p/ Preliminary. r/ Revised. NA Not available.
1/ Net shipments derived by subtracting the sum of producers' domestic receipts of each mill shape from the domestic industry's gross shipments of that shape.
2/ Data are rounded to three significant digits; may not add to totals shown.

Source: U.S. Department of Commerce.

TABLE 8
U.S. EXPORTS OF ALUMINUM, BY COUNTRY 1/

Country or territory	Metals and alloys, crude		Plates, sheets, bars, etc. 2/		Scrap		Total	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
1994:								
Brazil	194	$464	11,800	$31,400	631	$868	12,700	$32,800
Canada	114,000	182,000	366,000	850,000	57,900	61,200	537,000	1,090,000
France	21	214	5,110	25,300	33	211	5,160	25,700
Germany	237	699	8,550	23,700	189	144	8,980	24,600
Hong Kong	2,670	4,090	5,420	18,100	19,200	22,000	27,300	44,200
Japan	141,000	204,000	16,800	74,700	105,000	130,000	263,000	409,000
Korea, Republic of	19,000	29,700	16,000	55,800	16,100	20,700	51,100	106,000
Mexico	33,700	66,400	84,100	256,000	24,000	30,500	142,000	353,000
Netherlands	19	181	992	4,840	212	389	1,220	5,410
Philippines	1,170	1,530	154	1,710	37	21	1,360	3,270
Russia	--	--	86	929	65	107	151	1,040
Saudi Arabia	8	41	33,200	58,900	--	--	33,200	58,900
Singapore	138	357	4,080	11,600	242	232	4,460	12,100
Taiwan	15,500	24,900	24,100	59,700	56,100	50,700	95,600	135,000
Thailand	7,880	12,900	3,700	8,850	1,530	2,610	13,100	24,300
United Kingdom	163	1,170	21,200	62,000	52	45	21,400	63,200
Venezuela	37	244	16,400	40,200	111	49	16,600	40,500
Other	3,120	6,700	102,000	259,000	25,700	27,700	130,000	294,000
Total	339,000	536,000	719,000	1,840,000	307,000	348,000	1,370,000	2,730,000
1995:								
Brazil	92	241	18,400	82,300	331	618	18,800	83,100
Canada	122,000	211,000	377,000	1,070,000	50,800	58,900	550,000	1,340,000
France	67	275	6,790	30,700	458	675	7,310	31,600
Germany	320	1,030	12,500	40,500	277	1,010	13,100	42,500
Hong Kong	2,890	5,640	13,300	45,500	75,800	114,000	92,000	165,000
Italy	626	1,290	2,270	12,200	455	736	3,350	14,200
Japan	135,000	248,000	26,700	127,000	134,000	194,000	296,000	569,000
Korea, Republic of	36,900	74,600	29,400	126,000	29,400	40,400	95,700	241,000
Mexico	33,200	68,800	101,000	314,000	14,700	20,100	149,000	403,000
Netherlands	294	701	1,410	8,990	345	648	2,050	10,300
Philippines	2,840	6,170	594	2,830	121	159	3,560	9,160
Russia	(3/)	4	86	443	1	14	87	461
Saudi Arabia	10	8	27,100	72,400	11	20	27,100	72,400
Singapore	171	509	4,500	38,500	389	780	5,060	39,800
Taiwan	11,900	23,000	34,400	108,000	61,800	75,600	108,000	207,000
Thailand	16,200	33,300	9,980	27,800	4,520	9,540	30,700	70,600
United Kingdom	449	1,620	23,500	89,600	2,850	5,000	26,800	96,200
Venezuela	40	214	17,100	58,000	452	700	17,600	58,900
Other	6,080	14,700	105,000	359,000	52,900	65,900	164,000	439,000
Total	369,000	690,000	812,000	2,620,000	430,000	588,000	1,610,000	3,900,000

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes castings, forgings, and unclassified semifabricated forms.
3/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 9
U.S. EXPORTS OF ALUMINUM, BY CLASS 1/

Class	1994 Quantity (metric tons)	1994 Value (thousands)	1995 Quantity (metric tons)	1995 Value (thousands)
Crude and semicrude:				
Metals and alloys, crude	339,000	$536,000	369,000	$690,000
Scrap	307,000	348,000	430,000	588,000
Plates, sheets, bars, strip, etc.	683,000	1,680,000	764,000	2,380,000
Castings and forgings	5,610	62,400	6,630	81,900
Semifabricated forms, n.e.c.	30,000	105,000	40,700	157,000
Total	1,370,000	2,730,000	1,610,000	3,900,000
Manufactures:				
Foil and leaf	77,800	193,000	82,600	224,000
Powders and flakes	5,610	22,000	6,130	27,500
Wire and cable	54,600	136,000	43,600	135,000
Total	138,000	352,000	132,000	386,000
Grand total	1,500,000	3,080,000	1,740,000	4,280,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 10
U.S. IMPORTS FOR CONSUMPTION OF ALUMINUM, BY CLASS 1/

Class	1994 Quantity (metric tons)	1994 Value (thousands)	1995 Quantity (metric tons)	1995 Value (thousands)
Crude and semicrude:				
Metals and alloys, crude	2,480,000	$3,480,000	1,930,000	$3,690,000
Plates, sheets, strip, etc., n.e.c. 2/	375,000	804,000	497,000	1,290,000
Pipes, tubes, etc.	7,550	36,500	9,080	52,300
Rods and bars	125,000	241,000	116,000	301,000
Scrap	390,000	436,000	419,000	562,000
Total	3,380,000	5,000,000	2,970,000	5,890,000
Manufactures:				
Foil and leaf 3/	47,300	158,000	46,800	177,000
Flakes and powders	1,630	3,910	1,450	6,140
Wire	51,300	83,300	39,700	89,800
Total	100,000	245,000	88,000	273,000
Grand total	3,480,000	5,240,000	3,060,000	6,170,000

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes plates, sheets, circles, and disks.
3/ Excludes etched capacitor foil.

TABLE 11
U.S. IMPORTS FOR CONSUMPTION OF ALUMINUM, BY COUNTRY 1/

Country	Metals and alloys, crude		Plates, sheets, bars, etc. 2/		Scrap		Total	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
1994:								
Australia	576	$862	580	$1,280	999	$883	2,160	$3,030
Bahrain	--	--	9,430	17,800	--	--	9,430	17,800
Belgium	20	63	8,080	18,800	254	244	8,350	19,100
Brazil	143,000	192,000	4,890	8,800	8	23	148,000	201,000
Canada	1,430,000	2,080,000	307,000	606,000	214,000	248,000	1,950,000	2,930,000
France	6,560	12,700	10,900	33,700	1,510	1,770	18,900	48,200
Germany	3,480	8,230	21,400	76,000	12,500	15,200	37,400	99,400
Japan	386	837	11,000	37,700	779	1,040	12,100	39,600
Latvia	7,630	9,090	--	--	--	--	7,630	9,090
Mexico	404	647	4,190	9,930	68,500	76,100	73,100	86,700
Netherlands	13,300	19,700	4,630	14,000	4,800	5,720	22,700	39,500
Norway	164	1,200	769	1,500	--	--	933	2,700
Russia	643,000	858,000	33,600	51,400	13,700	19,100	690,000	928,000
South Africa	396	840	3,430	6,370	495	170	4,320	7,380
Spain	6,130	7,370	25,200	42,000	616	658	32,000	50,000
Tajikistan	53,400	45,700	--	--	--	--	53,400	45,700
Ukraine	3,730	4,840	(3/)	4	190	147	3,920	5,000
United Arab Emirates	1,890	2,440	--	--	184	246	2,070	2,690
United Kingdom	4,630	6,530	9,510	32,300	13,500	14,700	27,700	53,600
Venezuela	126,000	161,000	27,700	46,800	35,800	32,600	190,000	241,000
Other	43,300	66,800	24,900	77,400	21,700	19,200	89,900	163,000
Total	2,480,000	3,480,000	507,000	1,080,000	390,000	436,000	3,380,000	5,000,000
1995:								
Australia	1,120	3,380	2,070	5,610	931	1,500	4,120	10,500
Bahrain	Total --	--	8,690	21,200	93	125	8,780	21,300
Belgium	10	46	4,700	14,700	143	167	4,850	14,900
Brazil	87,800	162,000	2,250	5,540	1,210	1,840	91,300	170,000
Canada	1,290,000	2,510,000	304,000	757,000	219,000	312,000	1,810,000	3,580,000
Estonia	2,290	4,390	--	--	--	--	2,290	4,390
France	2,350	8,950	13,300	53,800	1,490	1,780	17,100	64,600
Germany	2,710	7,690	25,000	99,600	7,100	11,800	34,800	119,000
Italy	35	2,030	7,870	27,900	(3/)	2	7,910	30,000
Japan	237	901	10,400	47,500	719	622	11,400	49,000
Kazakstan	3,020	4,800	--	--	--	--	3,020	4,800
Mexico	2,230	3,290	11,700	31,700	107,000	130,000	121,000	165,000
Netherlands	744	1,170	4,780	17,600	911	1,380	6,430	20,100
Norway	204	1,410	265	899	163	195	632	2,500
Russia	396,000	719,000	124,000	260,000	10,700	18,700	531,000	997,000
Slovenia	--	--	3,770	13,600	--	--	3,770	13,600
South Africa	71	362	2,940	7,110	150	127	3,170	7,600
Spain	2,590	4,350	25,900	63,700	--	--	28,500	68,100
Tajikistan	19,700	31,800	--	--	142	184	19,800	32,000
Ukraine	41	59	--	--	--	--	41	59
United Arab Emirates	292	545	--	--	890	1,400	1,180	1,940
United Kingdom	2,750	4,550	14,200	49,200	8,370	11,500	25,300	65,200
Venezuela	102,000	177,000	34,600	78,800	26,200	28,300	163,000	284,000
Other	20,200	39,500	20,900	91,000	34,700	39,700	75,800	170,000
Total	1,930,000	3,690,000	622,000	1,650,000	419,000	562,000	2,970,000	5,890,000

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes circles, disks, rods, pipes, tubes, etc.
3/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 12
ALUMINUM, PRIMARY: WORLD PRODUCTION, BY COUNTRY 1/ 2/

(Thousand metric tons)

Country	1991	1992	1993	1994	1995 e/
Argentina e/	165	165	165	165	165
Australia	1,228	1,236	1,381	1,317	1,297 3/
Austria	80	33	--	--	--
Azerbaijan e/	XX	25	20	15	10
Bahrain	227	292	448 r/	447 r/	451 3/
Bosnia and Herzegovina e/ 4/	XX	30	15	10	10
Brazil	1,140	1,193	1,172	1,185 r/	1,188 3/
Cameroon e/	83 3/	83 r/	87 r/	78 r/	80
Canada	1,822	1,972	2,308	2,255	2,172 3/
China e/	963	1,100	1,220	1,450	1,600
Croatia 4/	XX	20	26 r/	25 r/ e/	26
Czechoslovakia e/ 5/ 6/ 7/	68	68	XX	XX	XX
Egypt	178	178	178 r/	188 r/	190
France	286	418	426	388 r/	400
Germany	690	603	552	505 r/	500
Ghana	175	180	175	141	135 3/
Greece	152	153	148	144 r/	140
Hungary	63	27	28	31 r/	25
Iceland 8/	89	89	94	99	100 3/
India 7/	504	496	466	472 r/	463
Indonesia 7/	187	173	206	222 r/	220
Iran	108 r/	117 r/	109 r/	116 e/	118
Italy	206	161	156	176 r/	170
Japan 9/	32	19	18	17	18 3/
Mexico 7/	51	25	--	--	10
Netherlands	264	235	232	219	220
New Zealand	258	243	277	271	273 3/
Norway	833	813	887	858 r/	847 3/
Poland 10/	46	44	47	50 r/	52 3/
Romania 11/	160 r/	112	116 r/	120 r/	120
Russia	XX	2,700	2,820	2,670	2,722 3/
Serbia and Montenegro 4/	XX	67	26	7	16
Slovakia e/ 6/ 7/	XX	XX	60	60	60
Slovenia e/ 4/	XX	85 3/	80	80	80
South Africa	169	173	175	172 r/	195 3/
Spain	355	359	356	338 r/	340
Suriname	31 r/	32	30 r/	27 r/	27
Sweden	97	77	82	83 e/	83
Switzerland	66	52	36	24 r/	30
Tajikistan	XX	400 e/	250 e/	235 r/	230 3/
Turkey	56	59	59	60 e/	60
U.S.S.R. 12/	3,251	XX	XX	XX	XX
Ukraine e/	XX	90	90	85	85
United Arab Emirates: Dubai	239	245	242	247 r/	240
United Kingdom	294	244	239	231 r/	230
United States	4,121	4,042	3,695	3,299	3,375 3/
Venezuela	601	561	568 r/	585 r/	630 3/
Yugoslavia 7/ 13/	315	XX	XX	XX	XX
Total	19,700 r/	19,500	19,800 r/	19,200 r/	19,400

See footnotes at end of table.

TABLE 12--Continued
ALUMINUM, PRIMARY: WORLD PRODUCTION, BY COUNTRY 1/ 2/

e/ Estimated. r/ Revised. XX Not applicable.
1/ World totals, and estimated data are rounded to three significant digits; may not add to totals shown.
2/ Primary aluminum is defined as "The weight of liquid aluminum as tapped from pots, excluding the weight of any alloying materials as well as that of any metal produced from either returned scrap or remelted materials." International reporting practices vary from country to country, some nations conforming to the foregoing definition and others using different definitions. For those countries for which a different definition is given specifically in the source publication, that definition is provided in this table by footnote. Table includes data available through June 21, 1996.
3/ Reported figure.
4/ Primary ingot plus secondary ingot.
5/ Dissolved Dec. 31,1992.
6/ All production in Czechoslovakia from 1991-92 came from Slovakia.
7/ Primary ingot.
8/ Ingot and rolling billet production.
9/ Excludes high-purity aluminum containing 99.995% or more as follows, in metric tons: 1991--19,700; 1992--19,600; 1993--20,300; 1994--23,800; and 1995--28,400.
10/ Primary unalloyed ingot plus secondary unalloyed ingot.
11/ Primary unalloyed metal plus primary alloyed metal, thus including weight of alloying material.
12/ Dissolved in Dec. 1991.
13/ Dissolved in Apr. 1992.