

## Section 22

# MANUFACTURES

This section presents statistics on the manufacturing segment of the economy, including sugar processing and pineapple canning. Additional information appears in Sections 12 and 15.

The number of manufacturing establishments in Hawaii increased from 697 in 1967 to 967 in 1982. The value added by manufacture rose from \$326 million in 1967 to \$410 million in 1972, \$786 million in 1977, and \$1,120 million in 1982. More than three-fourths of all manufacturing activity in the State in 1982 was on Oahu. Food processing -- mostly sugar and pineapple -- accounted for more than 35 percent of the value added by manufacture in 1982. Between 1982 and 1984, the general excise and use tax base increased 30 percent for sugar processing, and 7 percent for pineapple canning, but declined 2 percent for all other manufacturing. There were two pineapple canneries and 12 sugar mills in Hawaii in mid-1984. The production of canned pineapple fruit and juices in 1981 (the most recent year available) was 18 million actual cases, well below the levels of earlier years. Sugar production in 1984 amounted to 1,062,000 short tons, the most since 1971. The value of sugar production (including commercial molasses) was \$393 million, compared with the record of \$677 million set in 1974. Important manufactures other than food processing include apparel (\$56 million in value added in 1982), printing and publishing (more than \$27 million), stone, clay, and glass products (\$39 million), and chemicals and allied products (\$25 million).

Sources for data on this subject include the United States Census of Manufactures, most recently conducted for 1982, the Annual Survey of Manufactures, publications of the Hawaii State Department of Agriculture and Department of Taxation, and reports and records of the Hawaiian Sugar Planters' Association. Historical Statistics of Hawaii, Section 16, reviews the figures for earlier years. Statistics for the nation as a whole appear in Section 29 of the Statistical Abstract of the United States: 1985.

Table 610.-- STATISTICAL SUMMARY OF MANUFACTURES: 1967 TO 1982  
 [For intercensal data, 1971-1981, see Data Book 1983, table 564]

Subject	1982	1977	1972	1967
All establishments <u>1/</u> (number) ...	967	949	773	697
With 20 employees or more .....	237	231	238	215
All employees:				
Number (1,000) .....	23.6	25.0	24.8	25.4
Payroll (million dollars) .....	360.4	276.8	191.1	139.6
Production workers:				
Number (1,000) .....	16.0	17.4	17.7	19.0
Hours (millions) .....	29.9	31.3	33.1	35.9
Wages (million dollars) .....	217.5	160.5	113.7	86.9
Value added by manufacture <u>2/</u> (million dollars) .....	1,119.6	785.5	410.0	326.2
Cost of materials <u>3/</u> (million dollars) .....	2,357.5	1,176.1	548.3	399.6
Value of shipments <u>3/</u> (million dollars) .....	3,443.0	1,974.0	955.6	723.4
New capital expenditures (million dollars) .....	89.4	44.4	46.7	26.0

1/ Includes establishments with payroll at any time during the year.

2/ 1982 data not directly comparable to data for earlier years; see source for discussion.

3/ Aggregate cost of materials and value of shipments include extensive duplication since products of some industries are used as materials by others.

Source: U.S. Bureau of the Census, 1982 Census of Manufactures, Hawaii, MC82-A-12 (April 1985), table 2a.

Table 611.-- STATISTICAL SUMMARY OF MANUFACTURES, BY COUNTIES: 1982

Subject	State total	City and County of Honolulu	Hawaii County	Kauai County	Maui County
All establishments <u>1/</u> (number) ...	967	780	99	25	63
With 20 employees or more .....	237	200	18	7	12
All employees:					
Number (1,000) .....	23.6	17.9	2.4	0.7	2.6
Payroll (million dollars) .....	360.4	279.4	37.9	12.1	30.9
Production workers:					
Number (1,000) .....	16.0	11.9	1.9	0.5	1.7
Hours (millions) .....	29.9	21.6	3.9	1.0	3.4
Wages (million dollars) .....	217.5	158.3	29.0	8.3	21.8
Value added by manufacture (million dollars) .....	1,119.6	901.5	100.6	26.6	90.8
Cost of materials <u>2/</u> (million dollars) .....	2,357.5	2,078.5	130.1	58.3	90.7
Value of shipments <u>2/</u> (million dollars) .....	3,443.0	2,947.3	229.6	84.9	181.1
New capital expenditures (million dollars) .....	89.4	58.4	7.5	5.9	17.6

1/ Includes establishments with payroll at any time during the year.

2/ Aggregate cost of materials and value of shipments include extensive duplication since products of some industries are used as materials by others.

Source: U.S. Bureau of the Census, 1982 Census of Manufactures, Hawaii, MC82-A-12 (April 1985), table 4.

Table 612.-- MANUFACTURES, BY SELECTED INDUSTRY GROUP AND INDUSTRY: 1982

SIC code	Industry group and industry	Number of establishments	Number of employees (1,000)	Payroll (million dollars)	Value added by manufacture (million dollars)	Value of shipments (million dollars)
	All industries .....	967	23.6	360.4	1,119.6	3,443.0
20	Food and kindred products ...	221	11.1	161.2	398.6	1,079.5
202	Dairy products .....	10	.5	10.4	20.3	68.8
203	Preserved fruits and vegetables .....	34	3.3	36.1	96.7	234.0
2033	Canned fruits and vegetables .....	9	3.1	33.6	89.3	214.5
205	Bakery products .....	33	1.2	18.9	41.6	70.7
206	Sugar and confectionery products .....	29	3.6	61.6	159.7	428.1
2061	Raw cane sugar .....	13	2.9	52.9	136.1	350.3
208	Beverages .....	12	.5	8.6	26.9	72.3
23	Apparel and other textile products .....	145	3.4	31.1	56.5	106.6
232	Men's and boy's furnishings .....	22	.8	7.5	13.1	22.9
233	Women's and misses' outerwear .....	78	1.7	15.7	26.3	44.6
2335	Women's and misses' dresses .....	62	1.4	12.8	21.1	37.3
27	Printing and publishing .....	177	2.5	(D)	(D)	(D)
275	Commercial printing .....	93	.9	14.3	27.0	44.5
28	Chemicals and allied products	21	.3	6.3	24.8	64.4
32	Stone, clay, and glass products .....	53	.9	19.2	38.9	80.0
327	Concrete, gypsum, and plaster products .....	29	.7	16.0	30.4	64.1
34	Fabricated metal products ...	42	.7	11.8	22.9	76.4

D Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

Source: U.S. Bureau of the Census, 1982 Census of Manufactures, Hawaii, MC82-A-12 (April 1985), table 5.

Table 613.-- DETAILED CHARACTERISTICS OF MANUFACTURES: 1982

Item	1982
Companies 1/ ..... Number .....	944
All establishments 2/ ..... do .....	967
With 1 to 19 employees ..... do .....	730
With 20 to 99 employees ..... do .....	193
With 100 employees or more ..... do .....	44
All employees:	
Average for year ..... 1,000 .....	23.6
Annual payroll ..... mil dol .....	360.4
Production workers:	
Average for year ..... 1,000 .....	16.0
March ..... do .....	15.1
May ..... do .....	16.5
August ..... do .....	17.6
November ..... do .....	15.0
Hours ..... millions .....	29.9
January to March ..... do .....	6.7
April to June ..... do .....	7.4
July to September ..... do .....	8.2
October to December ..... do .....	7.5
Wages ..... mil dol .....	217.5
Cost of materials, etc. 3/ ..... do .....	2,357.5
Materials, parts, containers, etc., consumed ..... do .....	2,050.5
Resales ..... do .....	184.0
Fuels consumed ..... do .....	57.2
Purchased electric energy ..... do .....	38.0
Contract work ..... do .....	27.7
Value added by manufacture ..... do .....	1,119.6
Value of shipments, including resales 3/ ..... do .....	3,443.0
Manufacturers' inventories:	
End of 1981, total ..... do .....	499.0
End of 1982, total ..... do .....	445.9
Capital expenditures for plant and equipment ..... do .....	94.5
New capital expenditures ..... do .....	89.4
New buildings and other structures ..... do .....	42.3
New machinery and equipment ..... do .....	47.2
Used capital expenditures ..... do .....	5.1

1/ For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control. Figure shown excludes auxiliaries.

2/ Includes establishments with payroll at any time during year.

3/ Aggregate of cost of materials and value of shipments includes extensive duplication, since products of some industries are used as materials by others (see appendixes).

Source: U.S. Bureau of the Census, 1982 Census of Manufactures, Hawaii, MC82-A-12 (April 1985), table 3a.

Table 614.-- DEPARTMENT OF DEFENSE MANUFACTURING FACILITIES:  
1977 AND 1982

[These data are not included in other 1982 Census of Manufactures reports, which cover only privately operated establishments]

Subject	1977	1982
All employees (wage board and graded):		
Number .....	5,500	7,200
Payroll (million dollars) .....	107.5	230.4
Production workers (wage board):		
Number .....	4,200	5,500
Hours (millions) .....	7.6	9.7
Wages (million dollars) .....	84.0	174.2
Costs (million dollars):		
Materials, supplies, and parts consumed .....	28.4	47.6
Contract services and other costs .....	21.5	15.3
Value of shipments or receipts (million dollars):		
Total billings .....	98.6	218.6
Total revenue .....	168.7	208.0
Value added by manufacture (million dollars):		
Total revenue less cost of materials .....	140.2	160.5
Revenue less cost of materials, contract services, other costs .....	118.8	145.2

Source: U.S. Bureau of the Census, 1982 Census of Manufactures, Manufacturing Activity in Government Establishments, MC82-S-2 (August 1983), tables 2 and 3.

Table 615.-- TOTAL EMPLOYMENT, VALUE ADDED, VALUE OF SHIPMENTS, AND GOVERNMENT SHIPMENTS BY PRIVATE MANUFACTURING FIRMS IN SELECTED INDUSTRIES, FOR THE STATE AND OAHU: 1983

[Employment figures in thousands; value figures in millions of dollars]

Subject	State total	Oahu
Number of employees .....	1.7	1.7
Value added by manufacture .....	286.1	284.9
Total value of shipments .....	1,632.9	1,632.9
Government shipments:		
Employees .....	(D)	0.5
Value of shipments .....	(D)	231.7
Prime contracts:		
Employees .....	(D)	0.4
Value of shipments .....	(D)	229.2
To Dept. of Defense:		
Employees .....	(D)	0.4
Value of shipments .....	(D)	228.8

D Withheld to avoid disclosing operations of individual companies.  
 Source: U.S. Bureau of the Census, Shipments to Federal Government Agencies, 1983, MA-175 (83)-1 (March 1985), pp. 18-19 and 24-25.

Table 616.-- INDUSTRIAL PARKS AND AREAS, BY ISLANDS: 1985

Island	Developed		Proposed	
	Number	Acres	Number	Acres
State total .....	33	3,066	12	1,873
Hawaii .....	6	618	2	1,035
Maui .....	4	195	2	330
Oahu .....	21	2,207	7	492
Kauai .....	2	46	1	16
Other islands .....	-	-	-	-

Source: Hawaii State Department of Planning and Economic Development, Industrial Parks and Areas in Hawaii 1985 (1985).

Table 617.-- GENERAL EXCISE TAX BASE FOR SUGAR PROCESSING,  
PINEAPPLE CANNING, AND MANUFACTURING: 1974 TO 1984

[In thousands of dollars. Data are on a cash basis accounting and may be distorted by cutoffs, out-of-period adjustments (assessments and error corrections), taxpayer reporting in wrong categories, and computer problems]

Year reported <u>1/</u>	Total	Sugar processing	Pineapple canning	Manufacturing <u>2/</u>
1974 .....	934,613	454,660	103,686	376,268
1975 .....	1,166,923	605,521	131,655	429,748
1976 .....	783,751	275,078	95,488	413,186
1977 <u>3/</u> ...	862,412	284,000	111,942	466,470
1978 <u>3/</u> ...	917,163	291,000	131,665	494,498
1979 .....	1,035,159	305,738	164,200	565,221
1980 .....	1,349,149	527,379	195,766	626,004
1981 .....	1,218,516	415,442	172,342	630,732
1982 .....	1,033,845	317,880	185,367	530,598
1983 .....	1,130,369	435,579	182,967	511,823
1984 .....	1,132,078	414,211	198,266	519,601

1/ Calendar year in which reported, including "prior years" reports. Income received in December is reported the following January and hence these annual totals generally refer to an "income year" ended November 30.

2/ Excludes sugar processing, pineapple canning, and petroleum refining.

3/ Partly estimated.

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Base" (annual tabular release).



Table 618.-- PINEAPPLE COMPANIES AND CANNERIES AND  
SUGAR COMPANIES AND MILLS: 1940 TO 1984

Year	Pineapple (end of canning season)		Sugar (December 31)	
	Companies	Canneries	Companies <sup>1/</sup>	Mills
1940 .....	8	8	38	34
1945 .....	7	7	36	32
1950 .....	9	8	28	26
1955 .....	10	8	28	26
1960 .....	8	9	27	27
1965 .....	6	6	25	27
1970 .....	4	4	23	26
1975 .....	3	3	16	17
1980 .....	3	3	15	14
1983 .....	2	2	15	13
1984 .....	2	2	14	12
ISLANDS: 1984				
Hawaii .....	-	-	4	4
Mau i .....	1	1	3	2
Oahu .....	1	1	2	2
Kauai .....	-	-	5	4

<sup>1/</sup> Excludes cooperatives.

Source: Pineapple Growers Association of Hawaii, records;  
Hawaiian Sugar Planters' Association, records.

Table 619.-- EMPLOYMENT ON PINEAPPLE AND SUGAR PLANTATIONS: ANNUAL AVERAGES, 1983 AND 1984

Year	Pineapple			Sugar		
	Total	Field	Cannery	Total	Field	Mill
1983 .....	4,850	2,300	2,550	8,250	4,500	3,750
1984 .....	4,250	2,100	2,150	8,000	4,300	3,700

Source: Hawaii State Department of Labor and Industrial Relations, Labor Force Data Book, as revised.

Table 620.-- HAWAIIAN PINEAPPLE PRODUCTION: 1977-1978 TO 1981

[In thousands. Pack year ended May 31 through 1978-1979 and calendar years 1979, 1980, and 1981. Hawaiian pack only; excludes overseas production by Hawaiian companies. Compilation of these statistics was suspended after 1981]

Year	Canned fruit		Canned juice		Frozen concentrate	
	Actual cases	Standard cases <u>1/</u>	Actual cases	Standard cases <u>2/</u>	Equivalent 6/10 cases	Standard cases <u>2/</u>
1977-1978 ..	12,482	8,490	8,403	5,750	294	270
1978-1979 ..	11,142	7,620	7,386	5,760	290	265
1979 .....	10,930	7,470	7,699	6,010	308	280
1980 .....	9,918	6,940	8,114	6,410	237	215
1981 .....	9,759	6,830	7,997	6,320	219	200

1/ 24 No. 2 1/2 can, 45-lb. cases.

2/ 24 No. 2 1/2 can, 42 1/2-lb. cases.

Source: The Pineapple Growers Association of Hawaii, records; Hawaii Agricultural Reporting Service, Statistics of Hawaiian Agriculture (annual).

Table 621.-- SUGAR AND MOLASSES PRODUCTION: 1969 TO 1984

Year	Cane land (acres)		Cane used for sugar (short tons)	Sugar produced (short tons)		Molasses produced (short tons)
	Total area	Harvested area		96° raw value	Equivalent refined	
1969 ...	242,216	113,232	10,839,272	1,182,414	1,105,060	340,330
1970 ...	238,997	113,816	10,457,377	1,162,071	1,086,000	322,480
1971 ...	232,278	115,810	10,685,019	1,229,976	1,149,510	330,227
1972 ...	229,611	108,456	9,929,068	1,118,883	1,045,708	307,543
1973 ...	226,580	108,189	9,645,452	1,128,529	1,054,723	301,500
1974 ...	224,227	95,826	9,082,684	1,040,742	972,677	293,380
1975 ...	221,426	105,125	9,485,299	1,107,199	1,034,788	301,335
1976 ...	221,551	99,926	9,172,649	1,050,457	981,757	275,352
1977 ...	220,729	96,770	8,994,388	1,033,739	966,132	284,349
1978 ...	220,697	99,355	9,263,190	1,028,933	961,641	310,238
1979 ...	218,773	100,610	9,632,135	1,059,737	990,430	325,843
1980 ...	217,718	97,358	9,214,136	1,023,232	956,313	315,088
1981 ...	216,099	97,573	8,831,477	1,047,541	979,032	311,719
1982 ...	204,749	89,261	8,807,998	982,913	918,630	287,190
1983 ...	194,258	92,808	8,926,358	1,044,204	975,913	303,254
1984 ...	188,396	89,541	8,453,721	1,061,814	992,371	314,202

Source: Hawaiian Sugar Planters' Association, HSPA Sugar Manual 1984, pp. 4-5, and records.

Table 622.-- AVERAGE RAW SUGAR PRICE AND SUGAR INDUSTRY EMPLOYMENT AND EARNINGS: 1969 TO 1984

Year	Average raw sugar price <sup>1/</sup> (cents per lb.)	Hourly-rated employees		Industry-wide strikes (weeks)	Average daily earnings <sup>2/</sup> (dollars)	
		Average number <sup>3/</sup>	Total man-days		Wages	Employee benefits
1969 ...	7.75	9,213	2,066,244	5	23.26	9.76
1970 ...	8.08	8,908	2,139,183	-	24.24	10.00
1971 ...	8.52	8,610	2,077,011	-	26.08	10.27
1972 ...	9.10	8,127	1,934,563	-	29.09	11.23
1973 ...	10.30	7,900	1,897,369	-	30.86	12.48
1974 ...	29.43	7,700	1,744,346	6	34.41	15.81
1975 ...	22.49	7,800	1,937,973	-	37.34	15.66
1976 ...	13.31	7,500	1,854,272	-	43.12	17.28
1977 ...	11.11	7,200	1,660,298	3	43.92	19.97
1978 ...	13.74	7,200	1,771,530	-	47.06	21.28
1979 ...	15.20	7,065	1,762,838	-	50.49	22.21
1980 ...	30.18	7,076	1,793,237	-	56.72	24.68
1981 ...	19.74	7,282	1,806,020	-	61.51	27.71
1982 ...	19.94	6,816	1,519,732	-	65.11	30.83
1983 ...	22.04	6,543	1,565,928	-	66.80	32.00
1984 ...	21.74	6,319	1,461,127	-	68.88	34.71

<sup>1/</sup> Average New York raw sugar price computed over all the days of the year (Hawaiian basis). The New York spot price was suspended from November 2, 1977 to August 20, 1979; figures for that period are based on Clearing Association settlement prices.

<sup>2/</sup> For non-supervisory employees.

<sup>3/</sup> Adults only.

Source: Hawaiian Sugar Planters' Association, HSPA Sugar Manual (annual), as revised and updated.

Table 623.-- VALUE OF SALES AND GOVERNMENT PAYMENTS FOR PINEAPPLE AND SUGAR PRODUCTION: 1974 TO 1984

[In millions of dollars. Calendar year data unless otherwise specified]

Year	Pineapple		Sugar		
	Canned fruit and juices <u>1/</u>	Fresh market sales <u>2/</u>	Value of production		Government sugar support payments
			Raw sugar 96 <sup>0</sup>	Commercial molasses	
1974 ..	118.2	8.85	659.2	17.4	8.6
1975 ..	126.6	10.08	354.6	11.5	-
1976 ..	130.0	14.49	245.5	11.5	-
1977 ..	140.0	21.58	219.1	7.7	48.7
1978 ..	133.4	29.45	269.5	15.7	8.1
1979 ..	176.3	30.08	322.2	23.5	-
1980 ..	192.2	34.34	566.4	27.7	-
1981 ..	172.0	45.59	314.2	13.7	-
1982 ..	156.1	49.92	343.9	7.6	-
1983 ..	171.6	47.40	396.5	13.7	-
1984 ..	202.0	47.60	382.9	10.1	-

1/ Value of canned fruit and juices and by products shipped out-of-State and sold within State. Prior to 1979, data are for pack years beginning June 1.

2/ Value FAS shipping point for outshipments, delivered wholesalers local sales.

Source: Hawaii Agricultural Reporting Service, Statistics of Hawaiian Agriculture (annual) and records.