

Manufactured In Alaska

By Neal Fried

The manufacturing industry doesn't grab many business headlines in Alaska. Manufacturing doesn't seem to command the economic punch of the oil industry and is seldom considered an integral part of the fishing or timber industries. And what insures anonymity for Alaska's manufacturing industry is the fact that it is a relatively small industry in terms of the number of people employed.



They Come In All Varieties and Sizes

In spite of the industry's size (7% of the state's wage and salary work force), there are nearly 500 manufacturing employers in Alaska. They range in size from Ketchikan Pulp Corporation, with more than 800¹ workers, to The Ulu Factory of Anchorage with six employees.

Although there are nearly 500 Alaska manufacturers, employment is concentrated in the bigger firms. Approximately 80% of Alaska manufacturers have 49 employees or less, but 82% of the industry's employees work for employers with 50 employees or more. In the Alaska Department of Labor's last count of the top 50 employers in Alaska, manufacturing had 11 firms in the top 50. No other industry had a greater number of firms represented among Alaska's largest employers.

Who Are Alaska's Manufacturers?

Among Alaska's manufacturers are fish processors, newspapers, pipe fabricators, timber companies, machine shops, bakeries, print shops, refineries, jewelers, concrete mixers, and furriers. (See Table 1.) Some of Alaska's new high-profile manufacturers include Anchorage-based Alaska Mountaintop Spirits Company, which produces Attakiska vodka, Chinook Brewery of Juneau, and Chugach Forest Products' new sawmill in Seward. As evident from the diverse firms listed above, the definition of manufacturing is quite broad. The official U.S. Department of Commerce definition of manufacturing is a business engaged in "mechanical or chemical transformation of materials or substances into new products". It also includes businesses involved in "assembling component parts of manufactured products if the products are neither a structure nor other fixed improvement." An example of this would be the Wolf Computer Company in Angoon that assembles personal computers.

Table 1

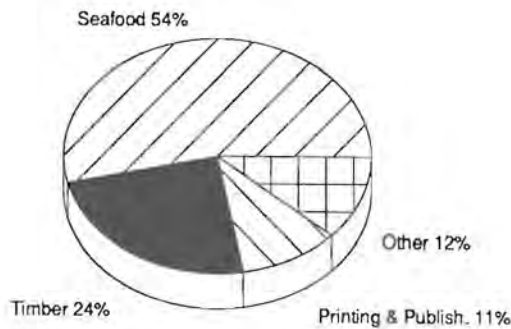
Alaska Employment in Manufacturing and Selected Subcategories

	1988 Employment	Percent Share
Total Manufacturing	15,204	100.0%
Food & Kindred Products	8,486	55.8
Seafood Processing	8,189	53.9
Textile Mill Products	320	2.1
Apparel & Other Textile	48	0.3
Lumber & Wood Products	2,670	17.6
Paper & Allied Products	948	6.2
Printing & Publishing	1,678	11.0
Newspapers	1,282	8.4
Commercial Printing	254	1.7
Petroleum & Coal Products	286	1.9
Stone, Clay & Glass Products	260	1.7
Primary Metal Industries	11	0.1
Fabricated Metal Products	149	1.0
Transportation Equipment	179	1.2
Ship & Boat Building	161	1.1

Source: Alaska Department of Labor, Research and Analysis Section

Figure 1

Alaska's Manufacturing Industry 1989



Source: Alaska Department of Labor, Research and Analysis Section

There are some activities, such as logging, that are not normally associated with manufacturing. Although taking a tree and turning it into a log represents a minimal amount of manufacturing it is considered manufacturing, nevertheless. Some might also say this about newspapers, but there is a major printing process, involving chemicals and assembly, in publishing a newspaper.

Manufacturing in Alaska: Advantages

Alaska's abundant natural resources are the number one asset for many manufacturers. Whether it be furs, oil, fish or timber, proximity to the raw materials is an advantage for Alaskan manufacturers.

Another advantage some Alaska manufacturers tout is their ability to produce custom-made products for local conditions. Alaska Battery Manufacturers and Alaska Windows are examples of manufacturers whose products are made specifically for Alaska's climate.

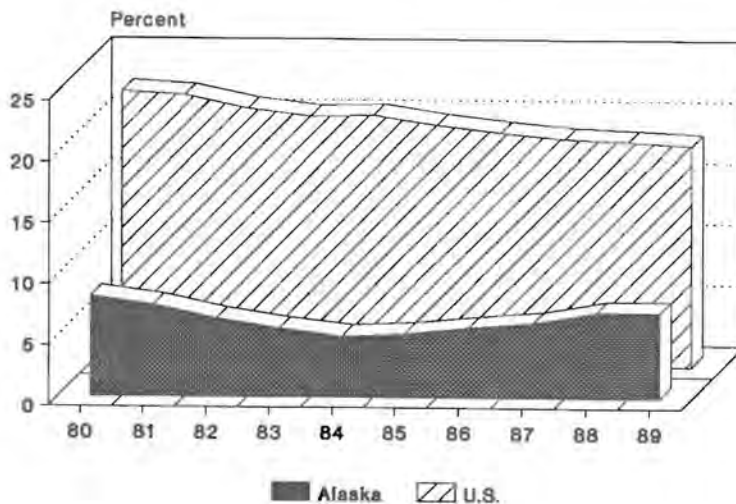
Proximity to demand can also work to a manufacturer's advantage. Some businesses require custom-made products that cannot always be ordered from a manufacturer outside Alaska. The desire of visitors to purchase locally made items also provides an incentive for many Alaska manufacturers. Some items such as insulation may be cheaper to manufacture locally because they are bulky and therefore expensive to ship.

Manufacturing in Alaska: Disadvantages

There are also disadvantages that Alaska manufacturers must struggle with to remain competitive. One mentioned repeatedly is freight expense. This affects manufacturers who either import their raw materials or export their products. Alaska's small markets can also be a big disadvantage. It is often tough to be competitive with much larger national operations. For other manufacturers, competing with areas having lower labor costs creates somewhat of a barrier for local manufacture.

Figure 2

Manufacturing's Share of Total Employment



Source: Alaska Department of Labor, Research and Analysis Section

Manufacturing Adds Value and Boosts Alaska's Economy

In the manufacturing process, value is added to a product. In Alaska this usually means taking a natural resource (fish, timber, oil, berries or water) and turning it into a semi-finished or finished product (canned salmon, lumber, aviation fuel, jelly or beer). In addition to raw materials, labor and other services are consumed during the value added process. And this generates more income, payroll, employment and overall economic activity in the state. The U.S. Department of Commerce estimated that in 1987, Alaska's manufacturers added \$827 million of value to the \$2.7 billion of manufactured products they shipped.

Alaskan Products are Consumed Locally, Nationally and Internationally

Some of Alaska's manufactured products are produced for local consumption, some are exported to other markets, and some are produced for both markets. One example of local consumption is The Bagel Factory in Anchorage which makes bagels and other products.

When a manufacturing firm starts producing a product for local consumption the process of "import substitution" usually occurs. This means that all or some of a previously imported product is being replaced by local production. An example of this was when Aurora Upholstery & Mattress of Fairbanks began manufacturing mattresses for the Alaska market. Import substitution is desirable because it generates more economic activity through the "value added" process and local income is retained longer in the community.

In Alaska's case most manufactured products are exported both to other states and internationally. Alaska exports proportionately more of its manufactured products internationally than any other state in the nation. In fact, Alaska's "Exporter of the Year" in 1989 was awarded to a manufacturer-Klukwan Forest Products. Exporting manufactured goods is desirable

Table 2

Alaska's Top 15 Manufacturing Areas (Ranked by employment)

	1988 Manufacturing Employment	Manufacturing as Percent of Total Employment
Municipality of Anchorage	2,119	2.1%
Kenai Peninsula Borough	1,486	13.4
Kodiak Island Borough	1,479	30.6
Ketchikan Gateway Borough	1,378	20.1
Wrangell-Petersburg Census Area	999	35.5
Aleutians West Census Area	961	29.6
Valdez-Cordova Census Area	859	21.5
Prince of Wales-Outer Ketchikan C.A.	750	37.4
Dillingham Census Area	719	31.9
Sitka Borough	701	19.0
Aleutians East Borough	639	62.5
Fairbanks North Star Borough	582	2.3
Haines Borough	576	47.3
Skagway-Yakutat-Angoon Census Area	377	24.0
Bristol Bay Borough	296	28.4

Source: Alaska Department of Labor, Research and Analysis Section

because it brings "new" income into the state and generates "value added" activity.

Seafood Processing and Timber Dominate Manufacturing

Although a variety of manufacturers operate in Alaska, the industry is dominated by a few products. (See Figure 1.) A little over half of all manufacturing employment is in the seafood processing industry; another 24% is in timber and paper products. Although these are two high-profile economic mainstays in Alaska's economy, not all of their activities are associated with manufacturing.

It is conceivable the fishing and timber industries could operate with very little Alaskan-based manufacturing employment. This could be accomplished by shipping all of the raw timber and fish products out to be processed elsewhere in the world. But instead manufacturers in these two industries have chosen to do some or all of the processing in Alaska.

For example, the timber industry employed 3,846 workers in 1989. And at least 40% of these jobs were involved with more intensive processing than simply logging, including producing pulp, cants and other wood products. If the industry simply shipped out raw logs those 1,526+ manufacturing jobs would not exist. These manufacturing jobs do not include other direct jobs in support industries such as transportation and government. Also not included are the indirect jobs generated by the pulp and saw mills. This manufacturing activity in the timber industry would all be characterized as "value added activity." In 1982 the Bureau of Census estimated that out of the \$259 million value of Alaska's lumber and wood products, \$94 million (excludes pulp products) of it could be attributed to the value added by the manufacturer.

It is a little less credible to argue that the seafood industry could also operate without its manufacturing arm because much of its product would spoil if not processed in proximity to where it was harvested. However, with the advent of factory trawlers it is also conceivable

Table 3

Manufacturing's Share of Total Employment by State, 1989

Rank	State	Manufacturing as Percent of Total Employment
1	North Carolina	28.3%
2	Mississippi	26.4
3	Indiana	26.0
4	South Carolina	26.0
5	Arkansas	25.8
6	Wisconsin	24.9
7	Michigan	24.8
8	Tennessee	24.3
9	Alabama	24.2
10	Rhode Island	23.5
11	Ohio	23.3
12	New Hampshire	21.6
13	Connecticut	21.4
14	Delaware	21.1
15	Pennsylvania	20.5
16	Kentucky	19.8
17	Maine	19.6
18	Iowa	19.5
19	Georgia	19.3
20	Minnesota	19.1
21	Missouri	19.0
22	Illinois	19.0
23	Vermont	18.4
24	Massachusetts	18.1
25	Oregon	18.0
26	Washington	17.7
27	New Jersey	17.6
28	Kansas	17.3
29	California	17.2
30	Idaho	16.5
31	Virginia	14.9
32	Utah	14.9
33	New York	14.4
34	West Virginia	14.3
35	Texas	14.2
36	Oklahoma	14.1
37	Nebraska	13.4
38	Colorado	13.1
39	Arizona	12.9
40	South Dakota	11.5
41	Louisiana	11.5
42	Florida	10.3
43	Maryland	9.7
44	Montana	7.6
45	New Mexico	7.5
46	ALASKA	7.0
47	North Dakota	6.3
48	Wyoming	4.5
49	Nevada	4.4
50	Hawaii	4.2
	U.S. Average	18.1

Source: U.S. Department of Labor, Bureau of Labor Statistics

that all of the product could be processed without accruing any "value added" to Alaska. The last time the Department of Labor made employment estimates for fish processing and harvesting, the processing end was responsible for 39% of the employment. And although 51% of these jobs are held by nonresidents, processing the product added 27% to the total value of the product Alaska sells.

Manufacturing other than Seafood and Timber

The remaining 25% of the state's manufacturing employment is spread among a number of activities. Employment-wise, the next largest group of manufacturers is printing and publishing. This category includes both newspapers and commercial printing operations. Two firms in this category are among the top 50 employers in the state -- the Anchorage Daily News and the Anchorage Times. On the printing side there are a large number of small and medium-size players. Most of their production is for local consumption and could be characterized as a "service" variety of manufacturing.

Another important group of manufacturers, particularly when it comes to product value, is Alaska's hydrocarbon refineries. Included in this category are four oil refineries (two in Fairbanks and two on the Kenai Peninsula) and an LNG (liquified natural gas) and urea plant. Quantifying their impact is difficult from a statistical standpoint because some of their employment and product value is accounted for in the oil and gas industry category. However, the U.S. Department of Commerce estimated that added value to petroleum products in Alaska was \$178 million in 1982, not far behind fish processing.

It is more difficult to arrive at values of product and employment figures for the rest of the manufacturing categories represented in the state. Employment-wise they represent 12% of the manufacturing employment. Among this group are furriers, metal fabricators, concrete mixers, bakeries and other food processors. Most of these manufacturers are relatively small employers, with a few exceptions such as Sunrise Bakery of Anchorage with 100 employees. As a group their

employment has grown more rapidly than the rest of manufacturing. One group that has grown particularly quickly is ship and boat building, where employment has almost doubled since 1980. The small firms' share of Alaska's manufacturing activity, however, has remained largely unchanged during most of the past decade.

Manufacturing - A Mainstay In Many of the Coastal Communities

The area with the highest concentration of manufacturing employment is the Aleutians East Borough. (See Table 2) There, 63% of all wage and salary employment is in manufacturing, and virtually all the manufacturing is seafood processing. Another area with a heavy concentration of manufacturing is the Haines Borough where nearly half of the jobs are in manufacturing - a heavy dose of timber-related manufacturing plus some seafood processing activity.

Most of Alaska's coastal communities are heavily reliant on manufacturing as a source of employment. Southeast Alaska, for example, relies heavily on manufacturing (17%) as a source of employment because of its well-developed timber and fishing industries.

The Kenai Peninsula has the most diverse manufacturing sector in the state. In addition, the Kenai manufacturing sector produces the highest value in manufactured shipments of any area in the state. Kenai manufacturers include a substantial hydrocarbon-based manufacturing industry (see above) and fishing industry. The Peninsula also has an emerging timber industry. In January the high-tech Chugach Forest Products sawmill was opened in Seward. It will be cutting finished dimension lumber as well as wood chips for local Alaskan markets and export.

The community with the largest number of manufacturing employees, more than 2,000, is Anchorage. With the exception of the timber industry, all the types of manufacturers mentioned above are in Anchorage, plus a host of other small ones -- furriers, machine shops, vodka makers, butchers, bakers and yes, a candlestick

maker. Anchorage manufacturers produce primarily for local consumption but there is also an export-related market. Fairbanks has a similar mixture of manufacturing employment, except for the fact that it is home to two oil refineries, MAPCO and Petro Star.

Alaska's Manufacturing Experience Different from the Nation's

Compared to the rest of the nation, manufacturing in Alaska is a modest affair: 18% of the nation's work force is employed in manufacturing compared to 7% in Alaska. (See Figure 2 and Table 3) Unlike Alaska, the national manufacturing scene gets front page play. In many respects the nation's economic well-being is measured by the strength of its manufacturing sector. And during the last decade, the outlook for the nation's manufacturing sector has not been very positive. Employment has fallen by more than half a million and projections of manufacturing employment usually show the nation's manufacturing sector continuing to decline.

Alaska's manufacturing trends have been quite different from the nation's. Alaska's manufacturing industry has enjoyed growth during most of the past decade and it is still growing. But drawing parallels may not be altogether fair because the industry makeup of Alaska versus the nation is so dissimilar. As mentioned earlier, timber and fish products are responsible for 78% of Alaska's manufacturing employment compared to 24% nationwide. The demand for Alaska's manufactured products is largely driven by the demand for natural resources. On a national scale it is the demand for finished products that determines manufacturing's fate -- products such as autos, high-tech equipment, textiles, and steel products. Fierce international competition in these markets has battered the nation's manufacturing industry.

This does not imply that Alaska's manufacturing industry is solid. Because so much of Alaska's manufacturing industry is resource-based, it is exceptionally sensitive to changes in world resource prices/exchange rates, demand, and the vagaries of nature. The crash of the

king crab fishery, the collapse of the timber market in the early 1980s, and the dramatic drop in oil prices in 1986, are all reminders of the vulnerability of Alaska's manufacturing industry.

The Potential For A Manufacturing Bonanza Exists

Alaska's biggest challenge for future manufacturing will be its attempt to capture more "value added" in the fishing and timber industries. It is this effort which has the greatest potential for generating additional manufacturing employment. Although fishing and timber generate the largest share of manufacturing activity, much of their product leaves the state with little or no processing.

For example, in 1989 offshore trawlers harvested 80% of the bottomfish caught in the Bering Sea/Aleutian Islands. Most of the fish processed in Alaska goes through only a primary processing stage and the secondary processing takes place elsewhere. In other words, salmon is sold whole frozen and not in fillets, surimi paste is shipped elsewhere to be turned into artificial crab legs and pollock leaves the state in blocks instead of fish sticks. If Alaska were able to tap more of this activity, literally thousands of additional jobs would be created, jobs paying more than the standard \$7/hour processing variety. The Japanese once estimated that the Bering Sea fishery alone produced 500,000 jobs in Japan. This is double the present size of Alaska's entire labor force.

On the timber side the story is not much different. Approximately 60% of Alaska's timber exports are raw logs. Looking at this simplistically, Alaska could more than double its timber manufacturing employment if most logs were processed in state. For every million board feet harvested, 2.4 loggers are employed; if these logs are processed into pulp they create another 2.4 jobs, into kiln-dried lumber 2 additional jobs are created.

The advantage of more value added scenarios in the logging and fish industries, at least theoretically, is that no new industry has to be developed or created from the ground up, nor would harvests of natural resources have to grow. Instead, Alaska merely has to

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capture more of the activity already taking place somewhere else in the world.

Some manufacturers are taking steps to capture more of the added value of these resources. Fillet machines and the production of boneless and skinless canned salmon are becoming more common sights in Alaska's fish processing operations. Fish processors such as Silver Lining of Ketchikan, Seafoods from Alaska and others are producing a variety of finished products for the national and international markets. The expansion of the Fishery Industrial Technology Center in Kodiak is an indication of a growing commitment to help the industry research and develop new product lines.

Examples of new value added activity in the timber industry also exist. The aforementioned Chugach Sawmill in Seward is producing finished dimensional lumber for local and international markets. There is also talk of building a press board plant in Seward to utilize some of the by-products of the Chugach plant. The Ketchikan Pulp Company added a sawmill to its operations in 1988, and two additional sawmills may open in Southeast Alaska in the near future.

There are a number of other possibilities that provide hope for the future of Alaska's manufacturing industry. As long as the state's market grows, Alaska's smaller manufacturers will find more opportunities. There are even some business leaders who believe a light manufacturing industry in Alaska may get a boost around Alaska's growing role as an international air-shipment point.

There has also been an effort by a number of groups to promote manufacturing in Alaska. They include the Interior Manufacturer's Association, the Alaska Manufacturer's Association, the Made In Alaska program and a number of handcraft programs. It is important to note that the State of Alaska's bidder preference law gives local manufactured goods an advantage. And the amount of preference is contingent on how much of the value added process takes place in Alaska.

**Summary -- Manufacturing:
A Small, But Important Industry**

Manufacturing is indeed a small industry in Alaska but it provides important infrastructure to the economy -- particularly to the fishing and timber industries.

Most of Alaska's manufacturing activity is related to one of Alaska's many natural resources, which includes fish, timber, furs, oil and a host of others. But there are also other manufacturing firms which produce a wide variety of goods in the state.

Alaska is often a tough climate for manufacturers to operate in. The state's markets are small, freight bills can be prohibitive and labor costs can be high. But the proximity to such natural resource wealth gives Alaska some advantages. The demand for on-site custom manufactured products, fresh products, Alaska-made products for visitors and other small niches has also provided incentive for many manufacturers to operate in the state.

Seafood and timber account for three quarters of the state's manufacturing industry. Printing and publishing and refining petroleum products take up most of the rest. The emphasis on seafood and timber also means these are the industries of particular importance to Alaska's coastal communities, where most of this activity takes place.

Although the state's manufacturing industry is small its potential is great. Most of the fish and timber products processed in Alaska today go through a primary processing stage and the rest of the processing is performed elsewhere in the country or world. All Alaska would have to do is capture more of the value added activity and the manufacturing industry would grow dramatically. If this happened, manufacturing could also help replace oil revenue activity.

Both timber and fish processing employment helped to cushion the economies of many communities during Alaska's recent recession. The manufacturing industry could help mitigate the decline in oil revenue-related activity if it continues to grow.

Notes:

- 1/ Includes all aspects of Ketchikan Pulp Corp. operations, including logging and sawmill activities.