

Manufacturing 2006

ALIVE and KICKING!

Manufacturers in other parts of the country are hurting, but in our state many sectors are healthy and some are going strong.

Perceptions Are Off - Way Off

The robust state of Washington state manufacturing is abundantly apparent on the shop floor of Capital Industries in Seattle. On a recent work day, Capital's team of 90 machine operators and welders formed, sheared, punched and welded thousands of metal shapes and parts that had been laser-cut by high-tech machines from hundreds of sheets of aluminum and steel.

Products ranged in size from one-ounce hinges for truck engine hoods to two-ton "roll-off" boxes – enormous, boxy steel containers that get deliveries to job sites by garbage trucks.

By the end of the day, Capital's employees had cranked out more than 50 completed job orders that were destined for customers in Hawaii, Alaska, Canada, Montana, California, Ohio and Mexico, as well as customers in our own region and state.

Between 2003 and 2005, business nearly doubled at the 53-year-old company – an increase that was remarkable for two reasons.

First, it took place during a period when Capital was recovering from a major fire that resulted in the loss of 40 percent of its production capacity for nine months.

Second, the increase took place while many national and local experts were pronouncing that American manufacturing is in its death throes. Which Capital obviously wasn't and isn't.

"One of our biggest challenges was finding enough machine operators to keep up with the growth," says Capital president Ron Taylor.

Manufacturing 06

Welcome to the State of Manufacturing in the State of Washington, circa 2006.

Many believe U.S. manufacturing is doomed and news stories seem to confirm the prognosis on a daily, if not hourly, basis. But look beyond the news cycle and the picture is not quite so gloomy. A survey of Washington state manufacturing by *Seattle Industry* reveals that in our corner of the global economy, manufacturing is not only alive and kicking -- in some sectors, it's kicking butt.



The survey examined all 21 manufacturing sectors defined by the North American Industrial Classification System. Business activity was reviewed by three factors:

- Gross business revenues reported by manufacturing companies to the Washington State Department of Revenue for tax purposes (principally, the B&O tax);
- Jobs recorded by the Washington State Department of Employment Security, and
- U.S. Department of Commerce export data

State data was reviewed for an 11-year period spanning 1994 through 2004; the period was picked because of the availability of state data for that time frame. Statistics were reviewed for 2005 to the extent they were available. Export figures were available for 2000 through 2005. Statistical research was augmented by interviews with eight companies engaged in boat building, metal fabricating, metal distribution, steel production, aerospace, and oil refining.

To gauge net manufacturing revenues, the survey also took into account the results of a highly complex input-output model for manufacturing that's calculated by the United States Census Bureau of Economic Analysis.

The results support a view of manufacturing that's much more positive than those that dominate the news media. These are among the findings:

JOBS


No doubt about it: the overall manufacturing job count is down. Jobs declined by 16 percent over the past decade, dropping from 309,607 to 259,280. The reductions caused major disruptions for tens of thousands of families and many communities and the losses hit high-tech firms as well as traditional ones. But a few bits of additional information help bring the figures into perspective.

- Eighty three percent of the job loss was concentrated in four sectors: aircraft manufacturing, food processing, paper products and wood products;
- Boeing accounted for nearly 60 percent of the entire job loss;
- While significant, the job losses in the other leading sectors were not as bad as those in aerospace – jobs in food processing dropped 12 percent, paper products was down 14 percent and wood products was down 20 percent.
- Boeing employment rebounded from its low point in the summer of 2004, growing from about 53,000 jobs to 64,000, an increase of 20 percent and adding 11,000 “family-wage” jobs back to the economy.

None of this diminishes the impact of the losses. Aerospace, food processing and the combined sectors of wood and paper products were the largest manufacturing employment sectors in our state at the state of the decade and they remain the largest sectors today. Any significant changes in these industries will exert major pulls on the overall manufacturing job base.

The recent Boeing upswing in hiring was the not only good news when it comes to jobs.

- Manufacturing jobs grew in 10 of 21 sectors during the decade, rising 12 percent from 67,576 to 76,050. Many of the growth sectors were ones with close ties to construction activity and the production of capital goods – trucks, boats, machines, equipment and other big-ticket items that are not subject to the Wal Mart discount retail phenomenon.



Jobs grew over the past decade in half the manufacturing sectors.

- Although the overall job numbers are down, business managers and owner interviewed for our survey feel they face a long-term challenge in finding enough skilled workers, from engineers to craftsmen, due to the advancing age of the manufacturing workforce and the low number of young people entering technical careers and high-skill trades.
- The topsy-turvy decade for aerospace included growth in one sub sector made up of aerospace companies not engaged in aircraft manufacturing. Jobs with those companies grew from 4,903 to 6,732 from 1994 through 2004, an increase of 37 percent.

GROSS BUSINESS REVENUES

By this state measure, manufacturing packs the same economic punch today that it did a decade ago and most manufacturing sectors showed pretty good revenue growth in the 1994-2004 period.

- In 2004, manufacturers reported \$94 billion in gross business revenues to the state. That represented 20 percent of all revenues reported by all businesses. In 1994, manufacturers reported revenues of \$63 billion, or 21 percent of all revenues.
- Manufacturing gross revenues grew 49 percent from 1994 through 2004. The growth rate was better for all manufacturers not engaged in aircraft manufacturing – 62 percent. That was just two percent less than the growth rate for all non-manufacturing businesses. Inflation grew 27 to 29 percent during the decade.
- Manufacturing revenues increased 13 percent during 2005, compared to 8 percent growth for all other businesses and with Boeing sales on the upswing, these numbers should continue to improve

REVENUES PLUS JOBS

In the 10 manufacturing sectors that provided job growth, the average growth in reported revenue was 133 percent, more than double the revenue growth for manufacturing as a whole.

NET IMPACTS

The U.S. Census Bureau of Economic Analysis maintains a highly complex input-output model that gauges the net impacts of all business sectors and governmental agencies on each

Business owners face a long-term challenge finding enough workers, from engineers to skilled craftsmen.



GROWTH SECTORS

Here are some of the good news stories about manufacturing that you probably never read about during the past decade. Activities are classified according to the North American Industrial Classification System. Comparisons are between 1994 and 2004 for jobs and sales figures are derived from gross business revenues reported to the state for tax purposes.

- Jobs and sales grew for companies that make “non-metallic mineral” products. That includes cement, glass, clay, gypsum board and “mineral wool,” such as insulation and fiberglass. Jobs rose by 14 percent, 7,892 to 9,009, and sales were up 69 percent, \$1.3 billion to \$2.2 billion.
- Jobs and sales were up for companies making machines for construction, agriculture, mining and other industrial activities. Jobs grew from 11,170 to 12,676, up 13 percent, while sales grew 124 percent, \$1.4 billion to \$3.3 billion.
- Jobs and sales increased for companies in metal fabricating, a sector engaged in the manipulation of metals, often to create parts for the machines described above. Jobs grew 9 percent, from 15,109 to 16,509. Sales were up 79 percent, \$1.7 billion to \$3.1 billion.
- Jobs and sales rose for companies making plastic and rubber products. Jobs climbed 8,397 to 9,402, an increase of 12 percent. Sales growth averaged 120 percent, \$836 million to \$1.8 billion.
- Jobs and sales grew for companies that make electrical equipment such as lights, lighting systems, marine equipment, appliances and electric motors. Jobs were up 56 percent, 2,625 to 4,100. Gross business revenues for the sector grew 244 percent, from \$212 million in 1994 to \$730 million.
- Boat building employment grew by 88 percent, 2,245 to 4,222, with 275 percent sales growth, \$289 million to \$1.1 billion.
- Furniture manufacturing experienced 94 percent growth in sales, \$647 million to \$1.2 billion, and jobs grew 6 percent, 7,440 to 7,878.
- Within furniture making, jobs with cabinet and countertop makers grew by 30 percent, 3,061 to 3,999; sales grew 102 percent, \$268 million to \$542 million.
- Sales and jobs were also up in “manufacturing miscellaneous” with revenues up 133 percent, \$1.3 billion to \$3 billion, and jobs up 12 percent, 9,476 to 10,626.
- Within “miscellaneous,” sign manufacturing experienced 46 percent job growth, 881 to 1,295, while revenues rose 136 percent sales growth, \$74 million to \$175 million.
- Jobs barely increased in oil refining, growing just three percent from 2,223 to 2,301, but high barrel prices for oil and retail gas prices triggered a 225 percent increase in revenues over the decade, \$4 billion to \$13 billion, surpassing the dollar value of our state’s entire agricultural output.
- While the job numbers for oil refining are relatively low, the “multiplier effect” of the industry is amazing, perhaps accounting for 20,000 additional jobs up and down the I-5 corridor. Average pay in the industry exceeds \$80,000 per year.
- Growth rates for many manufacturers are fairly closely aligned with sales and job growth in construction.
- Construction sales grew by 87 percent during the decade, \$16 billion to \$30.3 billion, while jobs grew by 34 percent, 122,600 to 164,000. ■

state's economy. Estimates are made through 2004. The model for manufacturing uses more than 485 factors to calculate net impact. According to the model, manufacturing contributed \$23 billion to our state's economy in 2004. Three additional pieces of information help to put that figure into context.

- Only two other sectors, real estate and government, generated higher dollar amounts, \$39 billion and \$37 billion respectively. But those sums are based on revenues that come almost entirely from the pockets of people who live in Washington. The real estate figure is calculated based on what we all pay for housing and it assumes we are all paying rent, even if we own or are buying homes. Revenue for government comes from right where you think it does: taxpayers. Manufacturing, on the other hand, is driven largely by export sales to companies outside our region or nation, bringing in new money that makes our economic pie bigger.
- Manufacturing's net impact was higher than the entire retail sector. According to the federal input-out model, retail activity in our state in 2004 had a net impact of \$19 billion, based primarily on the value of the mark-up between wholesale and retail prices. As with government and real estate, retail is driven largely by money out of our own pockets.
- Manufacturing's contribution was also higher than the \$22 billion net figure attributed to "information," the category that includes Microsoft.

EXPORTS

It's an article of faith that Washington is the most trade-dependent state in the nation. Unfortunately, you can't document that assumption through the export figures that are widely reported to support it. That's because the reports are based on U.S. Customs records for the dollar value of exports leaving each state, not the dollar value of exported goods made in each state.

For example, the U.S. Department of Commerce reports that Washington state exported \$4 billion worth of crops in 2005 while crop producers in our state reported gross business revenues of just \$364 million. Other figures, such as those reflecting aircraft manufacturing, come closer to the mark, but export figures all require an asterisk.

Anecdotal evidence gathered in our survey suggests local manufacturers produce lots of exports. Too bad the federal figures can't help us prove it.

Bottom Line

What does it all mean? *Seattle Industry* discussed the findings with several people with national

perspectives on the state of U.S. manufacturing. They feel our regional manufacturing base is faring better than many others.

"Some states are benefiting from manufacturing, and some are hurting big time," said Joseph G. Carson, director of research for Alliance Bernstein, an economic consulting firm in New York City. "You appear to be in a sweet spot because manufacturing is still such a positive factor in your economy."

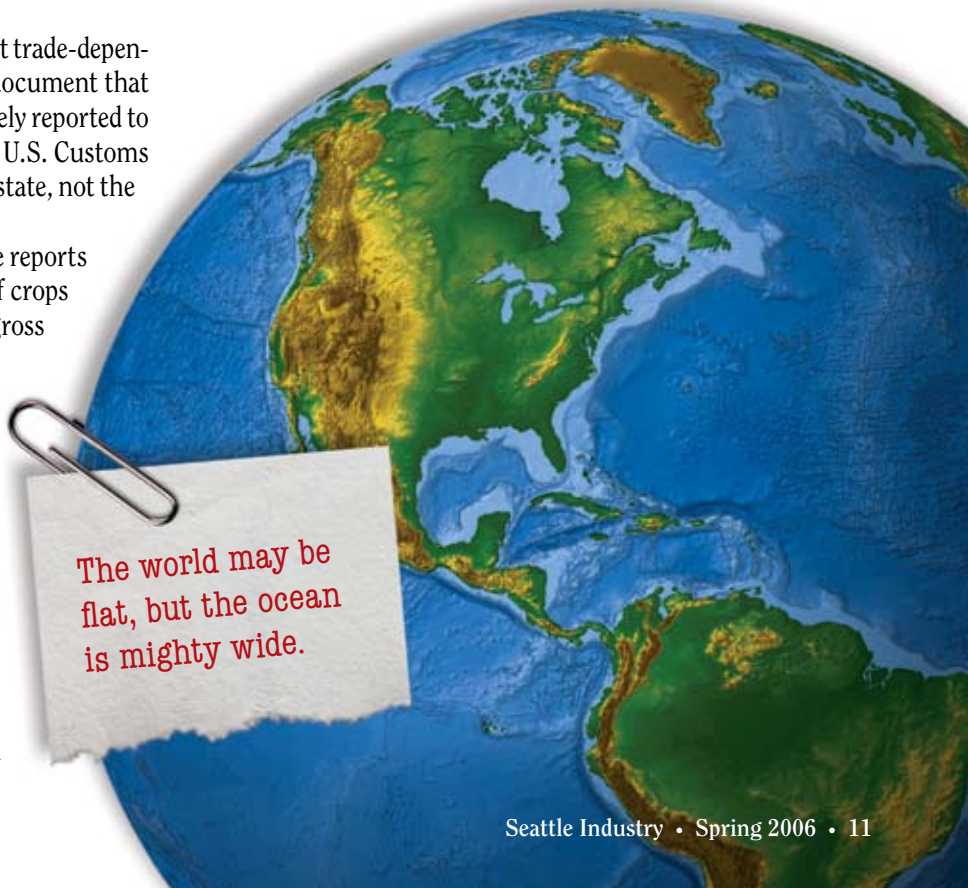
Carson attributed our positive condition to the fact our manufacturing base is so skewed to the production of capital goods – airplanes, trucks, boats and an amazing variety of industrial machinery and equipment. Regions that rely more strongly on the production of retail consumer goods are hurting and are much more subject to the "China price" and the Wal Mart phenomenon.

Our region enjoys also some key strategic advantages that help support local manufacturing.

Our Corner of the World

The world may be flat, as author Thomas Friedman states in his best-selling book, but the Pacific Ocean is still mighty, mighty wide and that's just one of the regional advantages that bolsters our place in the world economy. It takes about 11 days for a ship to cross the Pacific from Asia. That's a long period of time in the era of "just-in-time" production and companies in our region enjoy a big edge over foreign competitors through their location in the North American market.

We are also located in a corner of the world with good proximity to a wide array of abundant natural resources that are in high



demand today. These include timber – Washington and Oregon are still the two leading timber producing states in the nation -- and, thanks to our Alaskan and Canadian neighbors to the north, copious amounts of seafood, minerals, oil and natural gas.

Our manufacturing base also still enjoys the fruits of two huge booster shots. In World Wars I and II, our region emerged as one of the nation's largest defense production centers, creating everything from ships to coffins to trucks to B-17 bombers.

Because our region comprises the newest corner of the New World, it is also the site of significant construction activity that will continue for centuries to come.

Our survey suggests there are many close ties between construction and several manufacturing sectors. Construction sales and jobs grew over the decade and some manufacturing sectors grew right along with it. For instance, construction supported growth in companies that make cement and gypsum board (sales up 69 percent; jobs up 14 percent). Furniture was also a growth sector, pulled along strongly by companies that make kitchen cabinets and countertops. Those companies were up 30 percent for jobs, and 102 percent for sales.

Capital Production

Capital Industries grew up over the past 53 years by pursuing business opportunities connected with all these historic strands of our industrial economy. Regular customers include oil companies that purchase parts to support oil production on the North Slope of Alaska and in northwestern Canada. The company also makes parts for food processors, marine industries, and the general construction trade.

On the day *Seattle Industry* surveyed the company, its workers were turning out finished goods for a customer list that included:

PACCAR

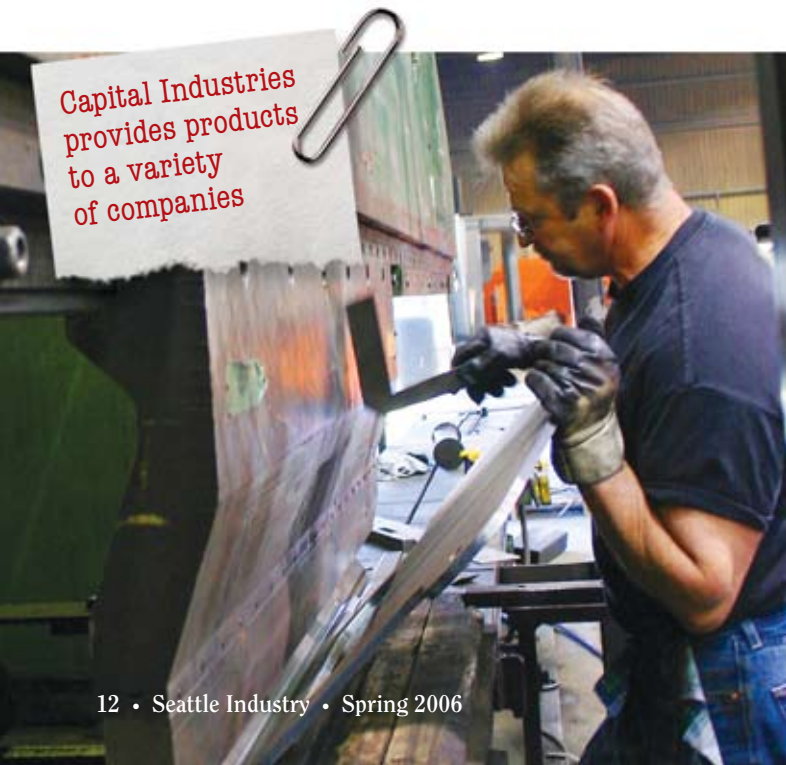
Bellevue-based PACCAR delivered 148,000 trucks around the world in 2005, and thousands of them included parts made at Capital Industries. Founded in Seattle in 1905, PACCAR celebrated its centennial in 2005 while scoring its most profitable year in history, earning net revenues of more than \$1 billion on sales of \$14 billion. It was the 67th year in a row of profitability for the company, which is one of the largest truck makers in the United States and one of the largest in the world. On the day *Seattle Industry* visited, Capital's workers made, crated and shipped a wide assortment of steel shapes and brackets that were bound for PACCAR factories in nearby Renton and company plants in Ohio, Canada and Mexico. Some of the parts will be used to help bolt truck engines in place. Others will help form and support wheel wells. Thousands of hinges made at Capital make it easy to swing open the engine hoods of Kenworth and Peterbilt trucks.

GENIE INDUSTRIES

Genie makes hydraulic boom lifts that are moved around by a variety of self-powered industrial lift trucks. Founded by a Seattle man, Founded in 1966 by a Seattle man, Ben Bushnell, in the basement of his home, Genie has grown to become one of the largest manufacturing companies in the state with 3,000 employees, most of them located at a large production complex in Redmond with the remainder at a plant in Moses Lake. Genie is part of the machine manufacturing sector that posted sales growth of 136 percent in the decade, \$1.4 billion to \$3.3 billion, and job growth of 13 percent, 11,170 to 12,676. Genie is now owned by TEREX, a world-wide company based in Connecticut that makes construction and mining equipment. On the day of our visit, Capital workers turned out dozens of "hinge plates," large steel shapes that are placed inside lift trucks to strength the operating base for the hydraulic booms. Genie's international reach was demonstrated to Capital's sales manager Gary Johnson earlier this year when he attended the opening ceremony for the Winter Olympics in Italy. The person who lit the flame was elevated to the task by the boom of a Genie lift truck containing lots of parts from Capital Industries.

ALUMINUM CHAMBERED BOATS

Aluminum Chambered Boats (ACB) uses a unique hull design that consists of several hollow, airtight chambers. The chambers are formed at Capital Industries where workers bend each chamber into shape from a long length of aluminum, leaving each end open. At the ACB plant in Bellingham, welders seal the ends to make them watertight and several chambers are then welded together to make up the hull for each boat. Gross revenues for boat builders in Washington grew 280 percent in the past decade, from \$289 million to \$1 billion, and jobs in the sector grew by 88





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percent, from 2,245 to 4,222. ACB contributed to the growth as it went from a garage shop with three employees eight years ago to 100 workers in 90,000 square feet of production space today. CEO Larry Wieber said the company buys most of its supplies from Seattle, including engines, marine gear, paint and other aluminum parts and supplies. "We spend a lot of money down there," Wieber said. ACB's customer base is weighted to Alaskans and the U.S. military.

GILLIG INDUSTRIES

Founded in San Francisco in 1890 to build buggies and carriages, Gillig is today the second largest transit bus manufacturer in North America and its 700 employees in Hayward, California turn out 1,200 to 1,300 buses each year. Customers range from Florida to Alaska. Capital makes aluminum parts for Gillig Vehicles.

DISPOSAL COMPANIES

One portion of Capital's plant is also set up to support a production line that turns out two-ton "roll-off" boxes for garbage haulers. The products are made for garbage companies in Hawaii, Alaska, Oregon, Montana and Washington. Each one takes about 40 hours to make. Capital produces about 30 each week-year.

On the day of our visit, Capital workers were also wrapping up two custom orders. One, for a port authority in the Hawaiian Islands, was for aluminum frames to support boat bumpers on

piers. The other was a stainless steel kettle for a Seattle-based company that makes machines for frying donuts.

Capital History

Capital was founded in 1953 by David Taylor Sr. and although the firm makes parts for capital goods, that was not the reason for its name. The name was coined by Taylor's wife because at the time he launched the business he possessed plenty of "industry" but no "capital."

Taylor had worked as a procurer for a major military contractor during World War II. After the war he believed there would be an enduring market for replacement parts for military vehicles and equipment. Following his intuition, he opened a small parts making shop in a garage near his home in the Rainier Valley.

The company quickly grew by expanding from the military market to customers in the timber industry, ship building, commercial fishing and growing transportation industries. Taylor retired in the early 1980s, turning over the business to his two sons, Ron and David Taylor Jr. who run the company today. Ron, the president, is in charge of operations. David oversees sales.

The Taylors trace the development of the family business through four distinct phases, each lasting about a decade. First, the company focused on sales to companies in greater Seattle. Then the company expanded to a state-wide market. Next, its customer base became regional and national in scope and, in the 1980s, the customer base went international. At each step, Capital made the steps necessary to keep old customers and reach new ones.

That meant steadily increasing the speed and consistency with which it made parts. That meant investing in more sophisticated equipment including high-wattage laser and plasma cutting



David, Bryan, Ron and Lyle Taylor with a portrait of company founder, David Taylor Sr.

machines that reduced the need for dozens of tools and machines as well as lowering the number of labor hours required to perform repetitive tasks. Capital also adapted to the “just-in-time” flow of supplies and product distribution to reduce inventories and keep customers happy. The changes were essential to keep up with the trend in which customers seek quicker turnaround times between work orders and deliveries.

As the company became more productive, Capital was able to reduce its work force from a peak of about 120 to less than 100. Capital also watched many of its former competitors go out of business.

Looking to the future, Ron Taylor does not foresee much of a threat from foreign competitors because of Capital’s proximity to its customer base in North America and the turnaround times that can’t be met if a delivery must include a transoceanic cruise.

Ron’s sons Kyle and Bryan have joined him at Capital and Ron thinks the future of the business looks bright. “I think it’ll be more of the same,” he says – meaning more adaptations, more productivity, more changes in technology and, hopefully, more sales and profits.

Adds Capital’s business director, Ray Fitzgibbons:

“We can kick butt as long as we can keep turning around work orders faster than it takes for a ship to cross the Pacific Ocean.”

Boeingitis

Let’s see...a healthy, growing metal-fabricating company run by bright, committed people who see a solid future for their business.

Can community leaders today even conceive of such things?

The answer seems to be in doubt. Throughout history, many in our region’s leadership have often suffered from a vision disease – call it “Boeingitis.” Symptoms include the inability to

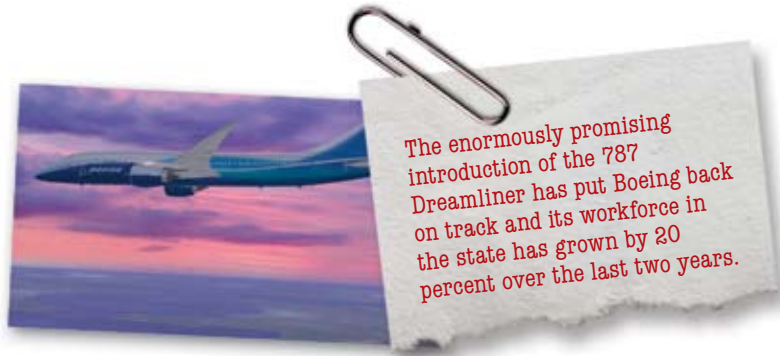


Even by Boeing standards, the roller coaster ride was a real doozy.

look at manufacturing and see anything except for The Boeing Company – or, maybe Boeing and “all that other stuff.”

For those suffering from this condition, the past seven years must have appeared at times to signal the beginning of the end.

From 1999 to 2004, Boeing slashed its workforce from 104,000 to 53,000 during a roller coaster run for the company that was marked by declining sales, the move of corporate headquarters to Chicago, scandals, the rise of Airbus and plenty of reminders that a whole lot of Boeing manufacturing work once performed in this region has been exported to suppliers in other countries.



The enormously promising introduction of the 787 Dreamliner has put Boeing back on track and its workforce in the state has grown by 20 percent over the last two years.

The enormously promising introduction of the 787 Dreamliner has put Boeing back on track and its workforce in the state has grown by 20 percent over the last two years, but good news is often no news and you have to wonder how many people still keep track?

Today, many community leaders and opinion leaders only talk of manufacturing in the past tense, as was demonstrated by a guest editorial printed by the Seattle Times on April 20, 2006. The editorial was written by four prominent civic leaders representing three important institutions in our region.

The guest editorial called for a new focus on “logistics” as the new source of the “good jobs with decent pay” that were once provided by manufacturing. In making their case the authors went on to note the following: “While many view the manufacturing sector as a race to the bottom – competition based on lower labor costs – the battle for the logistics ... will be a race to the top.”

Baby Got Back

The guest editorial brought to mind the old rap tune by Sir Mix A Lot, “Baby Got Back.”

Because if manufacturing is the “bottom,” in our region it is still pretty big and it is worth a second look.

According to the federal government, manufacturing in our state exerts a stronger economic impact than either the entire retail sector or the sector that includes Microsoft.

Total jobs are down, but business revenues are up and an ambitious young person looking for a good career opportunity in manufacturing will have no trouble finding one.

A record profit wasn’t the only accomplishment of note this year for truck manufacturer PACCAR. The company’s CEO Mark Pigott was also invited to the White House to receive the National Medal of Technology. The medal is awarded to individuals “for their outstanding contributions to the Nation’s economic, environmental and social well-being through the development and commercialization of technology products, processes and concepts; technological innovation; and development of the Nation’s technological manpower.”

It makes you wonder: Do you think the race to the bottom will be won by someone driving a Kenworth?

The surest way to lose our manufacturing base is to forget we still have one. ■