

The Rise and Decline of Auto Manufacturing

While the U.S. automotive industry is going through one of its more challenging eras in history and the foreign nameplate auto manufacturers in the U.S. appear to be booming, I am reminded of some similar events in history that we should be aware of: the rise and decline of the British automotive industry. Following World War II (the very early 1950s), the British automotive industry was the second largest in the world and was the largest exporter of automobiles and commercial vehicles. They exported more than the United States. They were second only to the U.S. in auto manufacturing output. They out-produced any other country in Europe and any other industrialized country, save the U.S. Then by the late 1960s, they began their abrupt decline followed by “nationalization” in 1975. Finally in April 2005, the last of the big British-owned auto plants MG Rover closed its doors, idling some 6,000 auto workers and severely undercutting another 20,000 supplier employees in the midlands of England. This sad event was punctuated with union leaders blaming mismanagement and the lack of government support. Regardless, the doors closed.

My life-long fascination with British motorcars, especially the MG, sparked my interest in another story that made the news on March 28, 2007: The “*First MGs Roll off Nanjing (China) Automobile’s Production Lines.*” China? Yes, China. China is the second largest, fastest growing automobile market in the world according to some sources. Nanjing Automobile Group is the oldest auto manufacturer in China founded in 1947, with 16,000 employees today making cars, trucks, and busses. They have big plans for their new acquisition. The Nanjing plant produced their first MGs less than two years after purchasing the ailing British car firm, MG Rover, and moving it to China. Their production goals include 200,000 MG cars plus engines and gearboxes in the High-Level New Technology Economic Development Zone located in a new \$452 million manufacturing facility. They began producing three models, among them the MG-TF, reminiscent (by name only) of my own restored 1954 MG-TF. While the original MG stood for Morris Garage, the new Chinese version stands for Modern Gentleman, appealing to their rapidly emerging elite class. Reading further, I discovered their plans to open a U.S. assembly plant in Ardmore, OK.

These two events got me wondering about the 100 years of British automotive history (1905 to 2005). Since the late 1960s, the British auto industry labor productivity was only one-fourth of the U.S. auto industry due to many historical labor, management, capitalization challenges. Then the reorganizing, nationalizing, and dismantling began: Ford bought Aston Martin (recently sold), Daimler, Lanchester, Rover, Jaguar, Land Rover, Vanden Plas. BMW bought Riley, Standard, Dawson, Triumph, Autovia, MG, Rover, and Mini. Nanjing (China) then bought Wolseley, Austin, Morris, Vanden Plas, MG, American Austin, Princess, and Sterling. Many of these names go back to the late 1800s and early 1900s through the 1940s and 1950s.

The MG Rover Longbridge plant was one of the most important factories in Europe for years and the largest British-owned car manufacturing plant employing over 22,000 in the mid 1970s. In 1995, the Longbridge plant employed 16,000 auto workers. Ten years later in 2005, their ranks fell to 6,000 until bankruptcy claimed MG Rover on April 7, 2005. Not too much left of the traditional British auto industry today.

However, the largely renewed British automobile industry still produces huge volumes of quality cars and trucks. In 2005, over 1.5 million cars and 200,000 commercial vehicles were produced with export sales of 74 percent and 63 percent respectively. The top five auto manufacturers in England today include: Nissan (the “most productive car plant” in Europe for seven years running), Toyota, BMW (Mini), GM-UK, and Honda. GM and Ford are numbers one and two in commercial

vehicle production. Ford (including Land Rover) is the largest engine producer in the UK, more than double number two, Toyota. Ford manufactures the largest number of cars and trucks sold in England ahead of Vauxhall (a GM company). All of this proves that the auto workers in England can perform and produce at world-class levels despite the decline and eventual destruction of their traditional British auto industry. We have noticed similar trends in the U.S. auto manufacturing industry over the past decade or more.

How about this side of the pond? I visited the BMW plant in South Carolina to see how they recently combined two separate production lines (BMW X-5 Sport Activity Vehicle and the BMW Z4 sports car) into a single production line. In less than six weeks over the Christmas/New Years break, they literally gutted over a million square feet of the 11-year old manufacturing plant and re-fitted the entirely new “single-line” process. Over the next 12 weeks, they ramped up to the present rate of 650 vehicles per day. They undertook this radical modification to optimize production of a very rapidly growing X5 SAV and the seasonal rates of the Z4 sports car. Coming down the assembly line were three to four X5s for every one Z4, and almost every vehicle was different: Different colors, wheels, interior or exterior trim, diesel or gas, basic or high-performance, domestic or export, left-hand or right-hand drive, coupe or convertible: an astonishing engineering and construction fete as well as a logistical and workforce training challenge. And it worked extremely well! Living proof that the U.S. workforce and leadership can do anything they put their mind to... making us the most productive nation in the world.

U.S. Productivity: Auto plant productivity is measured in a variety of ways across three operations: stamping, power-train, and assembly. Let’s look at “hours per vehicle,” which includes all employees in the facility being measured—hourly, salary, direct, and indirect. In 2006, Nissan’s overall productivity per vehicle led the North American industry at 28.46 total labor hours per vehicle (HPV), Toyota’s productivity was 29.40 HPV, Honda’s was 32.51 HPV, Chrysler Group had 33.71 HPV, GM’s was 33.19 HPV, and Ford’s overall productivity was 35.82 HPV. Again, this proves we can be competitive in America. But the legacy of some of our more traditional U.S. auto manufacturers and their workforce significantly reduces their competitive edge.

The most productive U.S. auto assembly plant (not including power-train and stamping) was Ford’s Atlanta operation that made the Ford Taurus and Mercury Sable (15.37 hours per vehicle). Ford recently announced the closing of this plant, idling thousands of creative and productive employees. The second most productive plant was GM’s Oshawa #2 (16.08 hours per vehicle). GM recently announced the closing of this plant in 2008. While “productivity” is essential, business success is much more than just improved productivity.

Additional factors of sustainable competitiveness include product sales volumes, operating costs, labor cost/hour, profit margins/vehicle, production flexibility, future growth potential, labor relations, flexible work practices, and distance from suppliers. Consider also “capacity utilization” and “profitability.”

Capacity Utilization: In 2005 in their North American operations, Toyota, Nissan and Chrysler were near full capacity (94 to 100-percent) while Ford was at 79 percent of potential capacity.

Profitability: Likewise in 2005, Nissan, Toyota, and Honda earned more than \$1,200 pre-tax profit on every vehicle sold in North America while Chrysler Group earned \$223, Ford lost \$590, and GM lost \$2,496.

The rise and decline of the British automotive industry and the woes of the “big three” U.S. auto manufacturers should provide some “lessons learned” for all U.S. manufacturers:

- **Market forces:** Paying attention to the customers and the markets is as important as paying attention to the competition.
- **Business strategy:** Manufacturing competitiveness demands that from time to time we fundamentally re-think how we perform work (design, build, work methods, marketing, sales...).
- **Measures of success:** Productivity, efficiency, and quality are important but are only part of a complex formula for business success (sales revenue – cost = profit).
- **Hidden capacity:** Capital asset utilization, tapping the “hidden capacity” in the plant’s critical processes must be a high priority (Focus: Overall Equipment Effectiveness, MTBF, MTTR).
- **Equipment reliability:** Poorly maintained and unreliable equipment can undermine almost all other improvement initiatives in a capital intensive business (higher costs, delayed shipments, interrupted flow).
- **Labor and management:** Labor/management communications across and throughout the organization must be open, honest, continuous, and focused on business success, not individual or organizational agendas (“*We’re going to win or lose together*”).
- **Work methods:** Restrictive work practices, outdated work rules and past practice can stifle creativity, innovation, and lead to significant and irreversible losses (“*If you always do what you’ve always done, then you’ll always get what you’ve always got.*”).
- **Standardized work:** Consistent work procedures provide the basis for training and qualifying the workforce and drive out human variation shift-to-shift and crew-to-crew (drives out variation, improves efficiency, reduces errors, lowers cost...).

Historically, the auto industry has set the stage for manufacturing strategies across many other non-auto businesses. History repeats itself, and history often tells us why things are the way they are today. Status quo, complacency, and ignorance can kill a once-thriving business. We can and we should learn from history to avoid common pitfalls that have hurt businesses and their workforce. Successful businesses and workforces help communities, and nations thrive. Let’s do our part in our businesses, plants, departments, and crews to remain competitive and prosperous.

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