



Like companies throughout the country, RCA in Bloomington changed what it produced during wartime and turned to women to keep up with demand (*Monroe County history collection photo*).

# FROM CARS to BULLETS

## Indiana's World War II Production Transition

By Rebecca Patrick



The Lilly Blood Bank was set up to provide dried human blood plasma for U.S. troops at the request of the federal government. In total, the company delivered more than two million pints of blood plasma (*© Copyright Eli Lilly and Company. All rights reserved. Photo courtesy of Eli Lilly and Company archives*).

Indiana's manufacturing prowess during World War II solidified an image for the state that still endures today.

It began decades earlier. By 1900, the Hoosier state was already part of the robust Midwest industrial heartland.

"I always like to say that there was no other place on the face of the earth that was more efficient and more sophisticated – ahead of Germany, Great Britain and certainly China or any other place," declares James H. Madison, author and noted history professor at Indiana University in Bloomington.

Out of necessity, what World War II did to manufacturing was hastened its growing sophistication, particularly for those larger companies that already had been making the transition to higher speed assembly line production. Of course, the big catalyst in moving things along was Uncle Sam.

"All the manufacturing was done at the behest of the federal government with government contracts," Madison explains. "I believe Indiana was eighth among all the states in government contracts, which is testimony to the power and significance of our manufacturing by 1941."

### Shifts in production

For those not around 76 years ago, it's hard to grasp the magnitude and how things changed once the Japanese bombed Pearl Harbor on December 7, 1941.

"It was a *real* war ... a very serious war; America could have actually lost this war," Madison asserts. "We forget that because we know how it turned out!"

"It was such a huge war that it twists and turns everything. You can't escape this war. We've been at war since 1945 and most of the time people haven't noticed. But World War II affected their daily lives deeply."

It was all hands on deck. For companies, that translated to producing whatever was needed to help the cause.

A prime example is the automobile industry, which by the time the U.S. entered the war was struggling to meet consumer demand. The country had bounced back from the Depression and many Americans now had sufficient money and desire to buy a vehicle.

"A trick question is what does a 1943 Plymouth look like? Well, there ain't no such thing," Madison quips. "The federal government forced them to stop producing

automobiles. So Indiana factories did not produce automobile parts; rather they produced military parts.

“They made jeeps in South Bend and other equipment at Studebaker. Same thing happened across the state.”

The large Chrysler plant in New Castle – employing more than 6,000 at one time – operated at full capacity on front-wheel drive systems for Army trucks, as well as parts for weapons carriers and tank treads.

RCA in Bloomington, which had only begun producing radios, now had the task of manufacturing proximity fuses for bombs.

While Eli Lilly continued to make medicine in Indianapolis, the company also shifted focus. It formed the Lilly Blood Bank and produced 20% of all blood plasma gathered by the American Red Cross. This proved valuable in aiding wounded soldiers because dried blood plasma was critical in the treatment of shock due to hemorrhage and severe burns. Lilly also collaborated with the government on large-scale production of penicillin.

In Fort Wayne, International Harvester rolled out trucks for the Army. Magnavox used its expertise on radio equipment, bomb detectors, as well as sonar and radar systems.

A number of Indiana companies received the Army-Navy “E” pennant for excellence in production during World War II.

Adds Madison, “Most of the military production during the war is good, old-fashioned hard slogging on assembly lines, heavy manufacturing in steel mills and auto parts factories and pharmaceutical companies.”

He calls the federal contracts tremendous

incentives for places like the various General Motors and Chrysler plants, Republic Aviation in Evansville and General Electric (GE) in Fort Wayne. There was far less of it happening for the small business, small-scale manufacturers; they simply couldn’t produce what was needed and the amount.

### Impact on cities, citizens

Perhaps no place in the state saw more of a wartime rebirth than Evansville.

Before some 50 local companies received government contracts, Thomas W. Bennett, former manager of the United States Employment Service, had described Evansville’s “ghostlike appearance” and “closed factories and deserted homes” (according to the Indiana Historical Bureau article, “How a WWII Fighter Aircraft Saved Evansville”).

In April 1942, Republic Aviation opened a plant to manufacture the P-47 Thunderbolt fighter plane and employed thousands of workers through the war’s end. Along with the Republic facility in New York, the company accounted for over 15,000 aircraft sent into battle.

Meanwhile, the Evansville Chrysler plant became a bullet-making machine.

For the duration of its nearly two-year government contract, that factory produced an impressive 96% of the .45-caliber cartridges used by soldiers – more than three billion in total.

Dwight Allen, president of the Military Writers Society of America, wrote in a 70th anniversary article on Chrysler for the Defense Media Network:

“Cartridges made at the arsenal had seven parts, passed through 48 processing operations, and had to survive 334 quality control inspections. . . . Rejection rate of cartridges was less than .1% of production.”

Joslyn Manufacturing and Supply Co. in Fort Wayne drew the most hazardous of duties: shaping the uranium rods used in the first atomic bomb dropped on Japan. As part of the then top-secret Manhattan Project, workers there almost certainly had little idea what they were handling or that it could be harmful to their health, or even deadly, down the road.

GE, which by this time was a flagship employer in Allen County, was best known for supplying superchargers for military aircraft; these gave wartime planes greater power, speed, height and distance.

GE recognized the importance of employee buy-in to what it was doing. A company newsletter, *The Works News*, served to rev up the patriotism among its workers, or “industrial soldiers” as it called them.

In an early edition about the war, GE president Charles Wilson wrote, “From that moment on, no American was working for himself alone, but for the whole of our country, for the future of that country and for humanity.

“We know the job before us. We know that our cause is the greatest for which man has ever fought. Let us remember that our every thought and act is devoted to that cause. We are producing for victory,” he concludes.

In the publication, through advertisements, employees were encouraged to purchase war bonds. They could also read letters from their



Republic Aviation was one of the largest producers of P-47 fighter planes for WW II, including making over 6,600 in Evansville. At its peak, this Evansville plant employed approximately 8,300; only 250 remained a few weeks after the war ended. The last plane flew out October 11, 1945 (*Evansville Courier and Press photo*).

co-workers in battle and details about the company's part in the war effort.

The large illuminated GE sign atop the facility on Broadway was turned off the day Pearl Harbor was bombed; its re-emergence on September 2, 1945, was a visible symbol for the city of a return to peacetime.

## New workforce faces

One of the major problems facing manufacturers by 1941-42 is similar to the challenges of today – a shortage of labor. The obvious reason then is that young men were off to war.

In Indiana alone, some 338,000 sons, husbands and fathers saw action until World War II's conclusion in September 1945.

The answer to the pressing need was hiring women and African Americans on a scale that neither group had previously seen or even desired – in the case of some females during that era.

"That's a very important part of the social as well as economic aspects of this war. Most of these plants need to produce at capacity – or beyond. A lot of manufacturers were not enthused about (hiring them) to be honest," Madison states.

"A lot of workers weren't enthused about having women working next to them or African Americans. There were protests, there were strikes, there were walkouts when those kind of people showed up in factories in Indiana. That's an unpleasant side of the war, but it was a reality of this war and the struggles of labor."

The United Auto Workers, already very established, in particular tried to pave the way for women and African Americans "but there was resistance even in this most progressive union – especially to putting them in skilled labor positions. But it happened."

A return to peacetime production spelled the end for much of the new workforce (though smaller labor shortages over the next two decades yielded some new opportunities for these groups).

"Many women in many of these factories are told – even before the war is over and certainly afterward – your job belongs to a man, your job belongs to a returning soldier and you have to give that up, and they did," Madison relays.

"They had gotten a taste of the human satisfaction that comes from doing a job – a job you rather like – and the benefits it creates in terms of a paycheck and otherwise. Women, in particular, got a taste of a good income, which they had never had before."

Madison explains while some of the women were happy or relieved to revert to



U.S. Rubber Company factories, like the one shown in Indianapolis, produced war goods such as tires, inner tubes and boots for the military. Of note on the worker's smock: a button bearing her photograph and employee identification number, considered standard wear at the time (*Indiana Historical Society photo, P0569*).

full-time home life, others were not. That latter group, he says, paved the way for women in the workforce today.

"Some of those women, 20 to 30 years later, sat around kitchen tables in New Castle, Greencastle or wherever and told their daughters what the war had shown them. And told their daughters that there were possibilities out there.

"In other words, what's called the feminist movement – I would call it justice and equality for all – came from those kitchen table conversations."

## Post-war impressions

Going back to churning out radios, motors and more wasn't merely a flip-of-the-switch type process. Still, Madison offers that the headline is how fast companies made it happen.

Driving that swift action was the recognition of tremendous pent-up demand as a result of many Americans having more money than ever before thanks to good-paying factory jobs.

"People had not been able to buy new cars, new washing machines, put running water in their homes – all kinds of consequences for everyday life that go back to the Depression and before. Now they have money and they want to buy," Madison shares.

"Even before the war is over, companies begin the process of retooling and adjusting to meet that consumer demand – and they do it with tremendous success. This is another success story – the re-orienting of

manufacturing. (For instance) automakers move from military jeeps to cars very rapidly. They struggled to meet that demand, but that's because demand was so large."

The war brought about the longest period of sustained economic prosperity in Indiana and American history – one that lasted until about 1970. Nothing like it has happened before or since, and it's in large part because of excellence in manufacturing.

Madison says this ultimately contributed to a false sense of security – one that was hard to shake for Hoosiers and contributed to the state's reluctance to change for so many decades.

"In some ironic ways, the manufacturing strength and success during the war years long term may not have served us so well. This is the human condition: We tend to think that jobs down at the factory for an 18-year-old kid will always be (there).

"People couldn't imagine in 1941 that factories like GE in Fort Wayne would go away. It was unimaginable. Historians certainly know that nothing will remain as it is. Everything changes. Hoosiers struggled for a long time to live in that reality."

That said, some things simply can't be predicted.

"The big manufacturing story down the road is the transition to the inclusion of Japanese-owned and other foreign-owned automobile plants," Madison surmises.

"You talk about not seeing ahead – no one would have seen that on December 7, 1941. The irony of history!"