The U.S. Auto Industry Never Just Produced Cars

by Marsha Freeman

There is a widespread misconception that the automobile industry in the United States is now in the throes of collapse because there is too much manufacturing capacity for the number of cars people can buy, and that there is nothing else that can be done with the auto industry's factories and machine-tool shops. Nothing could be further from the auto industry's own history.

Today, when dozens of manufacturing plants are being shuttered, and tens of thousands of skilled auto and machine-tool workers are losing their jobs, this manufacturing capacity, which is a national economic asset, must be converted to produce the rail, advanced mass transit, energy, and other infrastructure systems that Lyndon LaRouche has proposed. It has been done in the past. It must be done now.

Henry Ford, who created the system of mass production that made automobiles available and affordable for a large part of the nation's population, was born on a farm in Michigan, two years before the end of the Civil War. Henry Ford hated labor-intensive farming. So the first experimental wheeled, motorized vehicle he developed in 1907, two years before his famous Model T car, was the tractor, or "automotive plow." Ford began mass producing tractors during the First World War, and the company remained a major producer of tractors through the early 1960s.

In the 1930s, General Motors, established its Electro-Motive Division, producing diesel-powered locomotives and trains, contributing to the expansion of the nation's rail system. Later, the engines would be used in submarines and destroyers.

President Franklin Roosevelt's mobilization, to make the United States the "arsenal of democracy" during the Second World War, challenged the automobile industry to transform itself into a major supplier of high-technology war materiel.

The last automobiles rolled off the assembly lines in 1942, as the industry joined the full-scale war-production drive. Walter Reuther, president of the United Auto Workers union, and an expert tool-and-die maker, convinced the Roosevelt Administration that the auto industry should be retooled, pointing out that converting a plant to produce airplanes would take six months, while building a new plant would take 18. Over the course of three years of war production, the auto industry built 27,000 complete planes, 455,522 airplane engines, 255,518 propellers, plus steel helmets, small-arms ammunition, and other items.

The challenge to the auto and machine-tool industries and their skilled workers, was that all of these had to be built to much higher tolerances and greater reliability than automobiles, which, despite the skeptics, the industry magnificently accomplished.

The Auto Industry in Space

At the start of the Space Age, Chrysler Corporation was the prime contractor for the Redstone rocket, a derivative of the World War II German V-2 rocket, which it built for NASA at its missile plant in Michigan. Chrysler also built the Jupiter Intermediate Range Ballistic Missile there, and during the Korean War, built Army tanks at an unused manufacturing plant in Michoud, La., near New Orleans.

That plant was completely retooled by Chrysler in the early 1960s, two thousand workers were hired and trained, and there they built the first stage of the Saturn V rocket that took Apollo astronauts to the Moon.

In the 1950s, Ford established its Aeronautics Division, developing tracking and radar both for the Air Force, and for NASA's Scout rocket and Mercury manned spacecraft. The Ford Instrument Company built the guidance systems for the Jupiter and Redstone rockets. In the 1950s, Ford Aerospace and Communications built commercial communications satellites.

General Motors bought Hughes Aircraft in 1985, and combined it with Delco to create GM Hughes Electronics, which worked on aircraft and spacecraft. In 1992, GM purchased General Dynamics Missile Systems, producing communications satellites.

The space program would not have been possible without the machine tool, manufacturing, and research and development capabilities of the Midwest, centered around the mass-production auto industry. In addition to Chrysler and Ford, McDonnell Douglas in St. Louis built the Mercury spacecraft; a B.F. Goodrich engineer in Akron, Ohio designed the first high-altitude pressure suit; and Cincinnati Testing and Research Lab built the heat shield for the Mercury space capsule.

Auto parts supplier TRW produces components for the aerospace industry. Automobile tire producer Goodrich Corp. in Troy, Ohio made the tires, brake assemblies, wheels, and landing gear for the Space Shuttle. In its huge Canton, Ohio

National Archives

In 1942, the U.S. auto industry stopped manufacturing cars, and joined the war production drive, producing military vehicles, tanks, 27,000 airplanes, and numerous other items. Later, auto and related industries also made the space program possible. Here, workers construct bombers at a converted auto plant in Willow Run, Michigan, in 1942.

research facility, the Timken Company designed the precision ball bearings that are on the Spirit and Opportunity rovers that are now exploring Mars.

Tomorrow's Transport: Maglev

The most natural application of the auto industry's capacity is to other vehicles with an internal combustion engine and usually, wheels. These include aircraft, rockets, spacecraft engines, trains, trucks, tractors, construction equipment, and so on.

In addition to the rebuilding and expansion of America's decrepit freight-rail and passenger systems, a new technology on the horizon will be even a greater challenge.

Magnetically levitated transport, or electromagnetic flight, is the future of transportation. So far, commercial maglev systems are only in operation in Shanghai, China, and in Nagoya, Japan. Maglev vehicles replace wheel-on-rail trains, using magnetic systems for levitation and propulsion. Without friction, maglev vehicles can safely and quietly attain speeds of 300 miles per hour, or more.

The maglev vehicle itself most resembles an airplane, not a train, in everything from materials to its aerodynamic design. It is likely that, as in the German Transrapid design, the passenger vehicles would be manufactured in the currently underutilized aircraft/machine-tool industry.

But the other major components include magnetic and electrical/electronic components, which would be well suited for production by auto-parts producers, when one considers the array of components in a car today that are electronic.

Tomorrow's Energy: Advanced Nuclear

The U.S. nuclear industry has not built a new power plant in this country for 30 years. Much of our manufacturing capability has disappeared, and new reactors today would have to depend upon imports for large components, such as reactor-pressure vessels. Without the construction of hundreds of new nuclear plants in the United States over the next decade or so, there will be no possibility for rebuilding our industrial expansion. The increasingly idle auto industry can be key.

We must start building nuclear power plants in the United States immediately, using standardized advanced light-water reactors, which are passively safe, more economical and efficient, are faster to build, and require less maintenance than the 1970s generation now in use. (see *EIR,* June 17, 2005). Although none has been built in the United States, the Nuclear Regulatory Commission has approved and certified the Westinghouse AP1000 design, and will soon certify the General Electric ESBWR. The new generation of GE reactors has been built in less than 48 months in Japan.

These advanced light-water reactors should be ordered immediately by U.S. utilities. The first place to start building them is at "brownfield" sites where there is already an operating reactor, and where the site had been prepared for additional units in the 1970s, which were abandoned. At the same time, dozens more sites should be prepared for hundreds of new plants. To supply them, we must set up, virtually from scratch, assembly-line manufacturing plants. Pumps, piping, electronic controls, and other nuclear plant components can be produced in upgraded auto parts factories.

During its 30-year nuclear hiatus, the United States has fallen decades behind in development of the more advanced, so-called fourth-generation reactor designs, such as the high-temperature gas-cooled pebble-bed reactors. Today, only South Africa and China are developing prototype reactors using this critical technology.

The in-depth research and development capabilities of the auto industry, along with a national crash development program, are needed to not only "save" the auto industry, but to recreate the U.S. economy, and finally deploy technologies such as maglev and advanced nuclear power.