

Historic American Engineering Record

**The Ford Motor Company's
RICHMOND ASSEMBLY PLANT**

a.k.a.

THE RICHMOND TANK DEPOT

a historical report
prepared for

National Park Service
**Rosie the Riveter World War II Homefront
National Historical Park**
Richmond, California

by

Fredric L. Quivik
St. Paul, Minnesota

2 September 2003

**RICHMOND ASSEMBLY PLANT
FORD MOTOR COMPANY**

Table of Contents

	Executive Summary	ii
<u>CHAPTER ONE:</u>	INTRODUCTION	1
<u>CHAPTER TWO:</u>	HISTORICAL CONTEXT FOR THE RICHMOND ASSEMBLY PLANT	3
	A. Ford Motor Company & Mass Production	3
	B. Ford's System of Branch Assembly Plants	7
<u>CHAPTER THREE:</u>	DESIGN, CONSTRUCTION, AND EARLY OPERATIONS	13
	A. Industrial Development in Richmond	13
	B. Design & Construction of Richmond Plant	16
	1. Power & Construction	18
	2. Albert Kahn	20
	C. The Building, Then and Now	25
	D. Operation during the 1930s	30
	E. Production for the Civilian Market in the Early 1940s	34
<u>CHAPTER FOUR:</u>	WORLD WAR II	37
	A. The Roosevelt Administration Mobilizes Industry for War	41
	B. Military Production as War Approaches	45
	1. History of the Ordnance Department to 1941	46
	2. The Ordnance Department During World War II	52
	C. Ford's Conversion to War Production	56
	D. Jeeps	61
	1. Quartermaster Corps & Motor Transport for the Army	61
	2. Quartermaster Corps Develops the Jeep	65
	3. Ford's Production of Jeeps	69
	E. Tanks and the Richmond Tank Depot	73
	F. Patriotism	88
<u>CHAPTER FIVE:</u>	ORGANIZED LABOR AT THE RICHMOND BRANCH	97
	A. Organized Labor in the Auto Industry	97
	B. Richmond Sit-Down of 1937	100
	C. Labor During WWII	108
	1. Unions	113
	2. Women	115
<u>CHAPTER SIX:</u>	EPILOGUE: RE-CONVERSION AND CLOSURE	122
	A. Re-Conversion Planning	122
	B. Production during the 1940s & 1950s	123
	C. Closure	124
	BIBLIOGRAPHY	126

Executive Summary

The Ford Motor Company assembly plant in Richmond, CA, was one of that city's important sites of production in support of America's war effort during World War II. The assembly plant building stands today much as it did when Ford opened the plant in 1931, when Ford converted it to war-time production in 1942, when Ford reconverted it to production of civilian autos and trucks in 1945, and when Ford closed it in 1955. The building therefore holds considerable potential for interpreting the stories of American workers on the homefront during World War II. For that reason, the building will be one of the focal points in the National Park Service's new Rosie the Riveter World War II Homefront NHP being developed in Richmond.

It is possible for observers to understand some industrial buildings or complexes in isolation, relatively speaking. Operators of such buildings received raw materials at one end, processed those materials within the building, and shipped finished products from another end. Such was not the case with the Ford plant in Richmond, because before the war, during the war, and after the war the building was part of a much larger technological system. To understand Ford's Richmond plant, then, observers must understand the transportation infrastructure that linked the building to other parts of the technological system and must understand key operations that took place at other locations comprising the system.

The Ford Motor Company called its Richmond plant a branch plant, and it was one of many Ford branch plants throughout the U.S. and the world. Headquartered in Detroit (and later Dearborn), Ford manufactured most of its auto parts there, and in the early years assembled its autos there as well. But because it was more costly to ship fully assembled automobiles than it was to ship auto parts (auto parts can be packed in railroad cars or ships more densely than can assembled autos), Ford soon established a practice of assembling its autos at plants throughout North America to supply a geographically vast market. The company initially shipped manufactured parts to assembly plants by rail, but in the 1920s Henry Ford grew increasingly interested in shipping parts by water as well. Therefore, when the company decided to build a new assembly plant in the San Francisco area, access to deep-water shipping was one of the site requirements, in addition to the conventional requirement of good rail access. The site chosen in Richmond had access to ocean shipping as well as to the Southern Pacific and the Santa Fe railroads.

The Richmond plant was designed to receive unassembled parts by ship or by railroad, either at the pier and craneway at the south end of the building or at the railroad spur along the east side of the building. Cranes and conveyors could then move parts to appropriate storage locations within the building. Other conveyors and sub-assembly lines within the building moved parts along in the processes of assembling sub-assemblies like engines or wheels. Finally, all sub-assemblies and remaining parts converged at appropriate points along the final assembly line, located along the west side of the building. Beginning as frames, becoming fully-assembled chassis, and finally becoming cars, the autos moved from south to north along the final assembly line until they rolled off adjacent to the showrooms of the Richmond plant, located near the offices at the northwest corner of the building. From there, cars could either be displayed in the showrooms, driven to storage lots outside the plant, or placed on appropriate

modes of transportation, whether trucks, rail cars, or ships. The Richmond branch plant was responsible for supplying autos to a network of Ford dealers throughout northern California and on the Hawaiian Islands. Other branch plants supplied other market regions of the country and the world. Each branch plant had its own local managers, but they all took their orders from Branch Operations, part of Ford's headquarters hierarchy in Dearborn.

In much the same way, the Richmond plant was part of a much larger technological system during World War II, now under the command of the U.S. Army's Ordnance Department. Before the war, America's auto industry was dominated by Ford, General Motors, and Chrysler, but several other companies also held significant shares of the market. A plant like the Richmond branch was part of the Ford system; it assembled Ford products and only Ford products. During the war, however, virtually all of America's auto industry was mobilized in support of the war effort, so while the Richmond plant (now called the Richmond Tank Depot) was still owned by Ford, managed by Ford managers, and operated by Ford employees; it now processed tanks and other combat vehicles regardless of which company made them.

The Richmond Tank Depot served two basic functions during the war: 1) it assembled jeeps, much like it had earlier assembled cars and light trucks (although the process of assembling jeeps was simpler because it was a simpler vehicle), and 2) it processed tanks and other combat vehicles and readied them to be shipped overseas to the various theatres of the war. In the former operation, the Richmond plant received parts made by Ford or other supplies to assemble jeeps that were identical to and interchangeable with jeeps being made by Willys. In the latter operation, the Richmond Tank Depot played a key, intermediate function between the factories, where the vehicles were manufactured, and the Ports of Embarkation, where the vehicles were placed on ships. When the factories made tanks and other combat vehicles, the vehicles were essentially ready to drive, but the factories did not outfit them with small arms, radios, or other items for which the Army retained responsibility. Nor did the factories prepare the vehicles to withstand the weather and other rigors of transport on the high seas. These tasks the Army decided to do at its tank depots, of which it had three in the U.S. The Army located its tank depots in leased industrial plants, and it contracted with private companies to operate them. Two of the tank depots (Richmond and Chester, PA) were leased from and operated by Ford, and the third (Lima, OH) was owned by the government and operated under contract by General Motors. These three depots processed tanks and other combat vehicles, regardless of whether they were made by Cadillac or Chrysler or any of numerous other producers. Workers at the three depots installed small arms, radios and other communications equipment; they made modifications as necessary when vehicles were consigned to extremes of climate, like the Aleutian Islands or the desert of North Africa; and they coated critical surfaces in grease or otherwise prepared the vehicles for conditions on ocean-going freighters.

The management hierarchy at Richmond therefore was more complex during the war. The Richmond Tank Depot was under the command of an Army Ordnance officer, who took his orders from the commander of the San Francisco Ordnance District (one of fourteen ordnance districts in the country). The San Francisco Ordnance District in turn took its orders from the Office of the Chief of Ordnance - Detroit (OCO-D), where the Army had put its top Ordnance officer in charge of the procurement of combat and motor transport vehicles. (Prior to the war,

all Ordnance activities had been run from Washington, DC, but command for the procurement of vehicles was moved to the center of the nation's auto industry during the war so that it could coordinate better with that industry.) Because the contracts (jeep & tank depot) were between the Ordnance Department and the Ford Motor Company, OCO-D communicated with Ford's Branch Operations in Dearborn, which then passed the communications along to its local managers (the same managers as before the war), who gave orders to the Ford employees. Despite the fact that formal communications had to move from the local Ordnance commanding officer up through the Ordnance chain of command to OCO-D, over to Branch Operations, and down through Ford's chain of command to workers on the shop floor (or visa versa from Ford to OCO-D), there was also a high level of cooperation between Ordnance and Ford workers at Richmond concerning matters for which such local communications were authorized.

Army employees working at the Richmond Tank Depot during the war included a small number of Army officers and more than one hundred civilian Ordnance employees. There was also a small contingent of Signal Corps officers and employees serving under the commanding Ordnance officer. The Signal Corps was responsible for procuring and inspecting all of the Army's communications equipment, including that installed in combat vehicles at the Richmond Tank Depot. Ford's local management staff remained in place during the war, and the shop-floor workers assembling jeeps or processing combat vehicles were Ford employees. By the time Ford entered those Ordnance contracts, its shop-floor workers were represented by Local No. 560 of the United Auto Workers of America (UAW).

In a nutshell, then, here is how the Richmond Tank Depot functioned as part of the larger national system of ordnance production during the war. In assembling jeeps, parts arrived via railcar from Dearborn and other suppliers (for example, Spicer Manufacturing Company of Toledo, Ohio, supplied the axles and transfer case for all of the four-wheel drive jeeps, whether made by Willys or Ford). Ford workers at Richmond off-loaded the parts and stored them at appropriate locations relative to the main assembly line along the west side of the first floor. After each jeep rolled off the line, a Ford worker took it for a five-mile test drive before delivering it to Ordnance for inspection and acceptance. After acceptance, Ford workers took each jeep to the disassembly line where the wheels were taken off and it was prepared for boxing in wooden crates, which took place in a boxing shed located along the railroad spur on the east side of the building.

Combat vehicles arrived at the Richmond Tank Depot on railroad flatcars, delivered from manufacturers throughout the country. Because the rate at which manufacturers could deliver vehicles was not identical to the rate at which Ordnance received orders to deliver vehicles to the various Ports of Embarkation, many of the vehicles had to be stored on the lots adjacent to the Ford plant for considerable periods of time. As a consequence, we have numerous photographs of row upon row of tanks and other combat vehicles parked at Richmond. When Ordnance received orders for a particular number and kind of vehicles, the order would include specifications for how the vehicles should be equipped with small arms and communications gear and also for any modifications required in preparation for the particular front to which the vehicles would be shipped. Ford workers did all of the installations and modifications and then prepared the vehicles for shipment, which included coating surfaces with grease or fabric and

sealing openings. Some of the work in processing vehicles took place inside the craneway or on the first floor of the plant, and some took place outside, weather permitting. Ordnance workers inspected the work all along the way. Some combat vehicles, such as scout cars, were broken down and boxed, like the jeeps, but most, like tanks, were placed on railroad flatcars or in boxcars for transport to Ports of Embarkation without being boxed. Although Ordnance Department records mention that some vehicles were loaded on ships from the dock at the south end of the Richmond Tank Depot, it appears that most vehicles were loaded on rail cars for transit to Ports of Embarkation elsewhere.

One of the special things the Richmond workers did in preparing vehicles for shipment was to place a bundle of recent magazines and newspapers in each tank or jeep so that soldiers on the front lines could read about the homefront. This activity was the idea of long-time Ford employee, Frank Vivian, and it was undertaken with the full support of Ford management. For the excellence of its work in processing combat vehicles during the war, the Richmond Tank Depot received three Army-Navy, "E" Awards, the top award given by the U.S. military manufacturing facilities for excellence in support of the war effort.

As with homefront manufacturing facilities throughout the country, the Richmond Tank Depot employed a relatively large number of women during World War II. The percentage of Negro employees at the Ford plant also increased during the war. As previously mentioned, shop-floor workers at the Richmond Tank Depot were represented by Local No. 560 of the UAW, thanks to a long period of organizing activity before the war by the UAW in the Bay Area and by the Ford employees themselves. The organizing drive featured a sit-down strike at the Richmond plant in 1937, fierce opposition by Henry Ford and his top managers, and an investigation by the National Labor Relations Board (NLRB), at the request of the UAW, into the Ford Motor Company's unfair labor practices at the Richmond plant. The NLRB ruled in the workers' favor, ordering Ford to rehire a number of workers with back pay. When the Richmond branch plant became the Richmond Tank Depot, both Ford labor and management turned their energies toward helping to ensure that the U.S. won the war.

With the war over in 1945, Ford reconverted the Richmond plant to the production of civilian cars and trucks. The plant continue to serve that function within the Ford production system until 1955 when, because of the greatly expanded market for cars in California's post-war economy, the company decided to move its Bay Area operation to a larger site in Milpitas. The Ford Motor Company closed the Richmond plant that year.

CHAPTER ONE: INTRODUCTION

The Road ahead is dim with the dust of battles still unfought. How long that road is, no one can know. But it is shorter than it would have been had not our enemies misjudged us and themselves. For, when Hitler put his war on wheels he ran it straight down our alley. When he hitched his chariot to an internal combustion engine, he opened a new battle front--a front that we know well. It's called Detroit. *Lt. Gen. Brehon B. Somervell during a tour of Detroit's automotive industry in early 1942*¹

The former Ford Motor Company assembly plant at Richmond, California, is one of the cultural resources in Richmond that will house interpretive facilities for the Rosie the Riveter World War II Homefront National Historical Park, being developed by the National Park Service. The Ford plant is historically significant because of its association with several individuals and historical developments important to the history of the United States, especially the mobilization of American industry for war production during World War II. The purpose of this history of Ford's Richmond plant is to provide a detailed overview of how the plant developed in the context of those themes and therefore to suggest themes of interpretation that may be deployed by the Rosie the Riveter Park at the Ford plant.

The Ford plant is associated with Henry Ford and the Ford Motor Company. Ford is one of the most important American capitalists of the twentieth century. As a member of the "big three" in the U.S. automobile industry, his company helped to shape one of the most influential technologies in American life, the automobile. Ford and his company developed the assembly line, a method of mass production which greatly altered the way Americans and much of the world now manufacture the material culture of modern society. The Ford system, while headquartered in the Detroit area, embraced the entire country and indeed much of the world through a network of branch assembly plants. The Richmond plant was one of them. The Richmond plant was designed by Albert Kahn, the single most important American architect for the design of factory buildings. The Ford system also greatly altered the work lives of the people employed by it. Their responses, both as individuals and as groups, especially by means of labor unions, are one of the major stories in the history of the American people during the twentieth century. Workers at the Richmond plant were an integral part of that story through their organization of Local No. 560 of the United Auto Workers of America. The activities of industrial plants (giant corporations and small producers alike), of rank-and-file industrial workers, and of systems of mass production all came together during World War II as parts of yet another large-scale technological system, the mobilization of America's industrial prowess to produce the weapons, vehicles, and supplies needed by the United States and its Allies to emerge victorious from the most terrible war the world has known.

¹Quoted in Automotive Manufacturers Association, *Freedom's Arsenal: The Story of the Automotive Council for War Production* (Detroit: Automotive Manufacturers Association, 1950), v.

Although all of the assembly line and associated equipment are long gone, the Ford plant itself was virtually intact at the time the author commenced research for this report. A developer, however, had begun construction to adapt the building to new uses. Redevelopment plans call for certain changes to the building. A section of this report, "The Building, Then and Now" in Chapter III, describes the building as it stood in 1931 and in 2003, just as the redevelopment was commencing.

The author of this report has prepared it under contract to the Historic American Engineering Record (HAER) under the supervision of Richard O'Connor, HAER senior historian. The author conducted research for the report at the Research Center of the Henry Ford Museum in Dearborn, Michigan, the Detroit Public Library, Albert Kahn Associates, Inc., in Detroit, the National Archives in College Park, Maryland, the San Francisco Labor Archives and Research Center, the Richmond Museum, and the Richmond Public Library. The author also worked in cooperation with Judy Hart, superintendent of Rosie the Riveter World War II Homefront National Historical Park.