

Ohio and the World War II Home Front

Introduction

During World War II, Ohio contributed to the war effort primarily through its significant manufacturing plants. In addition to the estimated 839,000 men and women entering military service, about a million men and women worked in 933 war production sites.¹ Aeronautics and rubber were Ohio's two key industries, and the state housed numerous military installations. Although it was top secret during the war and for many decades after, Ohio played a significant role in helping crack German enigma codes.

Mobilization: Military and Industry

Cleveland, the state's largest producer of war goods, had contracts totaling \$5 billion. The city also boasted three hundred plants that produced military trucks, armor plating, steel, engines, small arms, cartridges, bombs, aircraft parts, and other war products. According to a 1945 issue of *The Clevelander*, the city produced 25 percent of the airplane parts needed for the nation's wartime aviation program.² Thompson Aircraft plant (TAPCO) was Cleveland's largest employer. By the war's end, 21,000 men and women worked in the plant.³ The General Motors Corporation's Fisher Body Aircraft Plant No. 2 was also located in Cleveland, where more than 14,000 workers made parts for B-29 bombers.⁴ In addition to manufacturing, the city was home to Crile General Hospital, which was built in 1943 for injured soldiers.⁵



WAVES marching from Sugar Camp; September 8, 1943 in Dayton, OH. Credit: Dayton History Archives

Like Cleveland, Cincinnati was home to numerous wartime manufacturing and aviation plants, with Wright Aeronautical being the largest subcontractor in the city. Wright Aeronautical began production on Whirlwind and Cyclone radial engines in 1941 and produced over 60,000 engines during the war. Necktie manufacturer Beau Brummell continued making ties for the duration of the war, but now in khaki color for the army. Other companies shifted entirely away from their original purposes in order to support the war effort. Fashion Frocks made parachutes, Mosler Safe made armored plates and tank turrets, and Cincinnati Air Conditioner made meat lockers to help stretch the national food supply.⁶

During the war, Akron lived up to its nickname as the Rubber Capital of the World. Home to B.F. Goodrich, Goodyear, Firestone, and numerous smaller rubber companies, Akron produced belts, boats, and other rubber parts as well as producing rubber synthetics to help address wartime shortages. Goodyear also shifted to aircraft production: In March 1943 Goodyear produced five planes, in October they made 86 planes and by December the plant had made 175 aircraft.⁷

¹ George W. Knepper, *Ohio and Its People* (Kent, Ohio: Kent State University Press, 1989), 368, 375.

² Knepper, *Ohio and Its People*, 370; Brian Albrecht and James Banks, *Cleveland in World War II* (Charleston, SC: The History Press, 2015), 76.

³ J.E. Vacha, "[World War II](#)," *The Encyclopedia of Cleveland History*, Case Western Reserve University.

⁴ Albrecht and Banks, *Cleveland in World War II*, 79.

⁵ "[Crile Hospital](#)," *The Encyclopedia of Cleveland History*, Case Western Reserve University.

⁶ Winkler, "The Queen City and World War II," *Queen City Heritage* 49, no. 1 (Spring 1991): 10, 12.

⁷ Tim Carroll, *World War II Akron* (Chicago: Arcadia Publishing Inc., 2019), 81.

In addition to industrial manufacturing, Dayton was the home to Wright Air Field and Patterson Air Field, which peaked at a workforce of 50,000 during the war. Wright was a wartime center for aeronautical research for the Air Corps, while Patterson repaired airplanes and was a logistics hub for the Midwest.⁸ However, Dayton's most interesting wartime activity remained top secret until 1994. Thousands of workers at National Cash Register (NCR) were working on mechanized code breakers to crack the German Enigma codes. Joseph Desch, an engineer and inventor, led the Navy's code-breaking unit, OP-20-G, to construct "bombes," highly technical electromechanical devices designed to unencrypt the German's Enigma enciphering machine. Famed British cryptanalyst Alan Turing visited the site in 1942 and expressed disappointment in early American progress, but the work of Desch and his peers was ultimately very successful, with some arguing that it helped end the war two years early.⁹

Mobilization: Changes for Workers

Employment increased significantly in many industries in Ohio. In Dayton, for example, NCR's employment rose from 8,000 workers in 1940 to 20,000 by 1945. Many African Americans migrated from the South to work in northern factories. Dayton's African American population increased by 3,000 to 20,273.¹⁰ POW labor, based at Camp Perry on the shores of Lake Erie, served factories, as well as local farms and hospitals. Factories also employed thousands of women, significantly impacting women's job opportunities. For example, the University of Akron and the University of Cincinnati trained women to become "junior engineers" for Goodyear Aircraft. Women interested in the six-month training program had to be at least 18 years old and needed a background in mathematics. The company paid for tuition, room and board, and monthly expenses. After completing the program, the participants were given jobs at Goodyear Aircraft as junior engineers.¹¹

Perhaps most notably, women played a vital role in the construction of the bombes in Dayton through the efforts of 600 WAVES (Women Accepted for Volunteer Emergency Service). A NSA historian describes their work: "Newly arriving WAVES learned soldering, how to read electrical graphs, and the general aspects of an electrical education. After that, the WAVES daily routine included eight hours of soldering wires. Three shifts of women worked throughout the day. . . Each woman was given a color-coded board with nails in it and wire. They didn't know it at the time, but the WAVES were wiring rotors to match those on the Enigma machines."¹² Because of the intensely secretive nature of this work, the WAVES were not told what they were working on and were forbidden from discussing it with anyone. Local Daytonians thought that the WAVES were on "R&R," and had no idea that these women were engaged in some of the most important work of the war.¹³

Discrimination and Fights for Equality

During the war, Ohio experienced intensified race relations on the home front. African Americans faced segregation and discrimination in both employment and housing. Cincinnati was a hotbed of union

⁸ "[Wright-Patterson Air Force Base: The First Century](#)," History Office, Air Force Life Cycle Management Center, Air Force Materiel Command, Wright-Patterson Air Force Base (Ohio 2015), 11-16.

⁹ John A. N. Lee, Colin Burke, and Deborah Anderson, "The US Bombes, NCR, Joseph Desch, and 600 WAVES: The first reunion of the US naval computing machine laboratory," *IEEE Annals of the History of Computing* 22, no. 3 (July 2000): 27.

¹⁰ [Montgomery County \(Dayton\)](#), National Park Service.

¹¹ Kathleen Endres, *Rosie the Rubber Worker: Women Workers in Akron's Rubber Factories During World War II* (Kent, Ohio: Kent University Press, 2000), 70.

¹² Jennifer Wilcox, "[Solving the Enigma: History of the Cryptanalytic Bombe](#)," Center for the Cryptologic History, National Security Agency (revised 2006), 27.

¹³ Wilcox, *Solving the Enigma*; Lee et al., "The U.S. Bombes."

activity, but the strikes were not over working conditions or better pay. Instead, the strikes attempted to maintain racist hiring practices from pre-war years. Historian Joe William Trotter describes the “hate strikes” that white workers engaged in against the hiring of Black workers into more technical jobs at one Cincinnati plant. He notes that “an estimated fifteen thousand white workers walked off the job at the city’s Wright Aeronautical Corporation when managers sought to hire blacks in the machine shop in June 1944.”¹⁴ In response, many African Americans in Ohio’s industrial centers participated in the “Double V” Campaign to eradicate racial discrimination on the home front. Tuskegee Airmen, who were stationed near Columbus starting in 1945, also challenged racial discrimination in the military.

Life on the Home Front

Despite racial tensions, Ohio residents eagerly joined in scrap drives, grew victory gardens, accepted rationing and blackout regulations, and served in civil defense programs. In Dennison, the railroad depot’s servicemen’s canteen served about 1.3 million soldiers free meals with the help of almost four thousand volunteers from eight counties.¹⁵ Ohio also notably became one of the places that the War Relocation Authority steered “loyal” Japanese Americans in incarceration camps for resettlement before the end of the war. In total, approximately 4,400 Japanese Americans resettled in Ohio, and 150 ended up in Dayton from 1943-46. Resettlement was a daunting experience, in which incarcerated Japanese Americans faced the task of rebuilding their lives in new places without their usual community support. In Dayton, the Church Federation provided community resources and helped secure housing and employment for incoming families, including talking to local unions and schools.¹⁶

After the War

The economic foundations laid during World War II, especially advancements in manufacturing, supported job prosperity and suburbanization in the postwar era. Today, Wright-Patterson AFB is Ohio’s largest single-site employer and remains on the forefront of aviation development and innovation.¹⁷ While the war did leave a legacy of workforce diversity, many women were pressured to leave their jobs and African Americans were excluded from generous G.I. benefits and subject to restrictive housing covenants that further intensified wartime racial tensions. Surviving resettled Japanese Americans did not receive a formal apology from Congress or reparations until 1988.

Places of World War II History

- **Dayton and Montgomery County:** Designated as Ohio’s World War II Heritage City, the area contained large portions of today’s Wright-Patterson Air Force Base, which was instrumental in aviation research and development. Dayton was also known for helping to break the Nazi 4-rotor Enigma Code and for Japanese American resettlement.
- **Dennison Railroad Depot Museum:** Located at an important east-west crossroads, the depot served over 1.3 million soldiers free meals through its Salvation Army canteen during the war.

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¹⁴ Joe William Trotter, *River Jordan: African American Urban Life in the Ohio Valley* (Lexington: University Press of Kentucky, 1998), 146.

¹⁵ “[Wartime History](#),” Dennison Railroad Depot Museum.

¹⁶ Megan Asaka, “[Resettlement](#),” *Densho Encyclopedia* (October 8, 2020); Sarah Nestor Lane, “Reading 1: Japanese Americans Resettlement to Dayton, Ohio,” in [\(H\)our History Lesson: Japanese American Resettlement in Dayton, Ohio](#), National Park Service (2023).

¹⁷ Maya Corbell, “[A Look Back...The Early Beginnings of Wright Field](#),” Air Force Material Command (October 9, 2024)