

10.0 Military/Defense

10.1 Introduction

September 1939 sparked the beginning of World War II when Germany invaded Poland. However, the United States did not enter the war until the Japanese bombing of Pearl Harbor, Hawaii in 1941. The *USS Arizona*, *USS Utah*, and the *USS Oklahoma* were bombed and destroyed during the attack. Rear Admiral Isaac Campbell Kidd, of Cleveland, was among the victims on the *USS Arizona*. Kidd was given the Congressional Medal of Honor for his heroism, along with two other Ohioans, Machinist's Mate First Class Robert R. Scott and Seaman First Class James Richard Ward, although, they were not the only Ohio natives to be killed during the Pearl Harbor attack (OHC 2017e).

The people of Ohio responded immediately to assist with the country's war efforts. About 839,000 Ohioans served in the armed forces during World War II (OHC 2017f). As an industrial city, Cleveland played a major part in the production of military equipment, training, research, among other war efforts. The U.S. Bureau of Labor Statistics stated that, "Cleveland is one of the Nation's industrial centers which has expanded most since the beginning of the war" (ECH 2017ee).

10.2 World War II & Manufacturing

Following the Great Depression, World War II returned jobs to Ohio's lagging factories. By September 1944, the employment rate had increased 34 percent above what it had been in 1940 (ECH 2017ee). Industrial facilities were expanded to supplement production rates. Manufacturing became the primary employer, increasing from 191,000 to 340,000 at the beginning of World War II. The Thompson Aircraft plant in Euclid began to expand in 1941 and became "Cleveland's largest employer, with a workforce of 21,000" (ECH 2017ee). The company was founded as the Cleveland Cap Screw Co. in 1900 and produced "...connectors and fittings primarily for

automobile and light machinery" (ECH 2017ff). By 1926, the company was a leading producer of automotive and aviation equipment and changed its name to Thompson Products, Inc. "In anticipation of World War II, Thompson Products, with government funding, built the TAPCO plant in Euclid in 1941 to increase its production of aircraft engines" (ECH 2017ff). Thompson Products, Inc changed its name once again in 1953 to Thompson Ramo Wooldridge (TRW) when the company merged with the Ramo-Wooldridge Corporation. TRW continued to be involved with military operations for decades to come, and at the turn of the twenty-first century, it was the eighth largest military contractor in the country (ECH 2017ff).

The White Motor Company, whose history is detailed in Section 9.4, manufactured military vehicles during the war. In the years following the war, the White Motor Company purchased smaller companies producing farm machinery and trucks (ECH 2017y). The company was originally located on Canal Street along the Cuyahoga River, and eventually expanded with a plant at 842 E. 79th Street. Sales increased by \$640 million between 1950 and 1967. A series of poor business decisions, including the purchase of Euclid, Inc. in 1968, forced the once thriving business to merge with White Consolidated Industries and restructure the company (ECH 2017y). Eventually the business filed for bankruptcy in 1980.

Thomas White's son, Rollin, was also a successful businessman who contributed to military production. In 1899, he invented the auto flash boiler, which was an efficient and safer alternative to previous designs. Built to be used on steam automobiles, the auto flash boiler allowed the water to be heated in the lower coils, opposed to the upper coils like previous steamers, this minor change created the ability to produce steam quicker. In 1916, he created the Cleveland Motor Plow

Company, later becoming the Cleveland Tractor Company in 1917. The original location was at Euclid Avenue and Lamb, before relocating to 19300 Euclid Avenue. The company was a success and had record tractor sales in the United States and abroad in 1937. During World War II the Cleveland Tractor Company produced tractors for the military that could be used to haul artillery. In 1944, the company was sold and later became Cletrac Inc. (ECH 2017gg).

Beginning in 1913, the Cleveland-based Steel Improvement Company located on Chester Avenue was dedicated to, “testing and enhancing the properties of steel through the use of thermal cycles” (Dill 2017). At the same time, the nearby Forest City Machine Company manufactured metal hardware. Seeing a logical merger, the two companies became Steel Improvement and Forge Company in 1916. In 1928 the company expanded its facilities and opened a factory at Addison Road and Metta Avenue. SIFCO Industries, Inc. was among the companies invested in war efforts. The engineers at SIFCO created a forged steel alloy propeller that had the strength to withstand airstrikes, which was monumental to Allied Powers. For the company’s wartime contributions, SIFCO was awarded the ‘E’ Pennant for Defense Manufacturing Excellence, which was the highest such honor given to manufacturing entities, by President Roosevelt in 1942 (Dill 2017). After the end of the war, SIFCO Industries resumed their goal to improve steel. In 1949, they became the first company to forge titanium. Realizing the growing popularity of the aerospace industry, SIFCO became a supplier of forged components for aerospace and engine construction. SIFCO remains a major supplier for the aerospace industry and has expanded production while retaining its ties to Cleveland (Dill 2017). By 1995 the company had factories at 970 E. 64th Street and 5708 Schaaf Road. The location at 970 E. 64th Street has remained the company’s headquarters (ECH 2017hh).

The manufacturing industry increased job availability in the areas in which the factories were located, in turn contributing to suburban growth in the surrounding areas. At the height of military manufacturing during World War II, the suburban population increased from 338,914 in 1940 to 474,724 in 1950. Companies such as Thompson Products, Inc and the Cleveland Tractor Company built factories in the Euclid neighborhood. Historic aerial maps provide evidence that the area became increasingly more developed between 1948 and 1955. By 1952 large industrial buildings were built along the railroad lines. The growth of residential and school buildings shows the population density in Euclid as the factories expanded. Communities with industrial factories consequently experienced a housing boom.

10.3 Civilian Defense

In January 1942, William A. Stinchcomb founded the Cuyahoga County Council for Civilian Defense (Albrecht and Banks 2015:9). The Ohio State Council of Defense was a product of Stinchcomb’s’ plan and was developed to act as a liaison between the local and national defenses. The council kept track of the rationing, as well as organizing rehearsed blackouts and air raids. The Cuyahoga County Council for Civilian for Defense had 80,000 workers at its height before the organization discontinued near the end of World War II (ECH 2017ii). To ensure safety, “[t]he county was divided into twenty-nine air raid report centers all linked to Cleveland’s Central Police District No. 1 on Payne Avenue. The various report centers were further divided into zones and the zones in sectors” (Albrecht and Banks 2015:9). Extraordinary numbers of citizens volunteered to provide assistance on the home front. Victory-Home Awards were given to those who met the five criteria:

1. This home follows instructions of the its air-raid warden;
2. This home conserves food, clothing, transportation and health;
3. This home salvages essential materials;

4. This home refuses to spread rumors; and
5. This home buys War Savings Bonds and Stamps regularly (Albrecht and Banks 2015:10).

In the years following World War II, the threat of nuclear weaponry use was forefront on many peoples' minds. The ability to deliver nuclear weapons across the ocean via ballistic missiles threatened all major U.S. cities. The Office of Defense Mobilization was created in response to the Korean War in 1950, and encouraged local communities to participate, much like the earlier Cuyahoga County Council for Civilian Defense during World War II. The council was not reestablished, but instead individual municipalities contracted with the county to oversee the local civil defense program (ECH 2017ii). John J. Pokorny lead the program using similar defense strategies as William A. Stinchcomb in World War II. During this period, food and medical supplies were stockpiled, fallout shelters were designed within public buildings, and an evacuation plan in case of radiation fallout was created to increase the rate of survival (ECH 2017ii).

In a variety of locations around Cuyahoga County, the Federal government's U.S. Defense System built Nike Missile Bases to protect the county. Located in Bratenahl, Painsville, Willowick Eastlake, Warrensville, Warrensville/Highland Hills, Garfield Heights, Parma/Midpark Station, Lakefront Airport, and Lordstown Military Reserve/Fairview Park, the Nike Missile Bases included, Nike-Ajax missiles, missile-assembly, generator, acid-storage buildings, a fueling area, underground missile storage and launchers, barracks, and a launcher-control trailer. The control area, which was one-half mile from the launch area, consisted of a mess hall, administration building, barracks, radar tower, and control van (ECH 2017jj). New technology, such as the Nike-Hercules missile, allowed the Bratenahl and Rocky River/Fairview bases to be updated. By 1971, all the original bases were not in operation. That same year the civil defense agreements were discontinued by county

commissioners, and in 1972 the county civil defense office closed, no longer seeing the need for organized defense. Survey did not discover any remnants of the bases.



Figure 10-1. Nike site along Lake Erie in 1961 (Cleveland Press Collection, Michael Schwartz Library, Cleveland State University).

10.4 Military Hospitals

Military hospitals were required to expand to house wounded soldiers to meet the needs of the war effort. As of June 1939, the Medical Department included four Medical Regiments, with two of these oversees, and one Medical Squadron, resulting in a general shortage of capacity during wartime. The inadequacy of military hospitals led to the American Red Cross utilizing civilian and university hospitals. As the United States entered the war it was clear that new facilities had to be constructed to adapt to the situation. In 1943, Crile Hospital was established in Parma Heights as a temporary military hospital (Cleveland Memory Project 2017b). After World War II, the hospital was used for the Nike anti-aircraft missile base at the start of the Cold War (Cleveland Historical 2017b). The hospital closed in 1964 and today is part of the Cuyahoga Community College College's Western Campus.

10.5 Aviation

Cleveland has significant associations with aviation history. Cleveland's location in the Midwest between major cities including New York City, Chicago, and San Francisco, was beneficial for railroad lines and airmail delivery.

The first airmail was sent in December of 1918, stopping in Cleveland along the way. By 1920, transcontinental flights became more prominent. In 1925, it was clear that the landing of planes needed to be modernized, and as a result, Cleveland Airport (now Cleveland Hopkins International Airport) was built. Prior to the Cleveland Airport, planes would land in scattered available fields. In 1930, the world's first radio traffic system was installed in Cleveland. Production, entertainment and research in the aviation field was prominent in Cleveland (ECH 2017kk).

Founded by publisher Joseph Pulitzer in Long Island, New York, the Pulitzer Trophy Race consisted of an air race that highlighted new aviation technology in a competitive, entertaining fashion. These new technological uses included, "dead stick landing contests, glider demonstrations, Goodyear blimp flights, parachute jumping contests, and military demonstrations" (National Air Racing History 2017). The Navy High Hats were an aviation formation team that, "created a worldwide sensation by flying with their planes tied together by one-inch ropes from wing struts to wing struts" (National Air Racing History 2017). After doing a country wide tour, the National Air Races were established in 1929 at the Cleveland Airport. Local businessmen and civic leaders helped make Cleveland the home to the National Air Races. Among the businessmen was Frederick C. Crawford, who became president of Thompson Products Inc. The first National Air Race in Cleveland was a dramatic event including parades, fireworks, and an aircraft exhibition lasting ten days. Local businesses and industries, Cleveland Chamber of Commerce, and the military worked together to promote the event. Celebrity aviators such as Roscoe Turner, Amelia Earhart, and Charles Lindbergh were among the competitors.

Cleveland's involvement with aircraft research was emphasized at the National Air Races. Although the event was a success and drew a large audience, six pilots were killed during the 1929 National Air Races, with five dying during

the cross-country trips from Hopkins airport (National Air Racing History 2017). Apart from the years 1930, 1933, 1936, and 1940–1945, the races were held in Cleveland until 1949 (ECH 2017ll). In 1949, a horrific accident occurred when pilot Bill Odom, flying a modified P-51C racer, crashed into a residential home in Berea. Bill Odom was killed, along with homeowner Jeanne Laird and her 13-month old son Craig. The tragedy caused the races to end until 1964 when a new Cleveland Air Show opened at the Burke Lakefront Airport. The National Air Races contributed to the success of World War II because they "stimulated engine and structural innovation" (National Air Racing History 2017). In 1949, the slogan, "National defense through research" was used to promote the military's involvement.

The Cleveland area also played a role in the manufacture of aircraft parts. Jack & Heintz Co. was formed by Bill Jack and Ralph Heintz in 1940. The production was small in their Maple Heights factory where they manufactured airplane parts. Jack & Heintz received a military contract to produce airplane starters, their successful execution and reasonable price lead to more military contracts including manufacturing autopilot devices. The company was a success and by 1944 they employed over 8,700 workers. Although production was high during the war, it rapidly declined in the years following, and the company merged with Precision Products in 1946 (Rotman 2017a).

In 1942, the Fisher Cleveland Aircraft Plant and the National Advisory Committee for Aeronautics were established on the land surrounding the Cleveland Municipal Airport. Opposite the Fisher Cleveland Aircraft Plant, "the National Advisory Committee for Aeronautics constructed the world's largest wind tunnel as part of its Aircraft Engine Research Laboratory, which survives as the National Aeronautics & Space Administration Lewis Research Center" (ECH 2017ee). The Fisher Cleveland Aircraft Plant's size made it clear that it was built for mass production. An article

featured in *The Evening Review* describes the monumental structure, “as one of the largest yet undertaken by any automobile company in the aircraft field. Engineers said the fabrication section of the building is the longest span flat slab concrete structure in existence” (*The Evening Review*, 5 May 1943:12). The Fisher Cleveland Aircraft plant was built to manufacture parts for the B-29, also known as the “Superfortress” (ECH 2017ee). Owned by the Department of Defense, General Motors oversaw the construction of the B-29 bomber at the facility. At the height of production 15,000 workers were employed for the project (ECH 2017mm). The Fisher Cleveland Aircraft Plant saw the completion of the, “[i]nstallation of new, more powerful engines, turbo superchargers and reversible pitch propellers on the XB19A—the largest experimental bomber,” which began production at Romulus Army Air Field in Detroit, Michigan (*The Fresno Bee*, 16 January 1945:3A). Referred to as the ‘World’s Biggest Plane’ with a wing span of 212 feet and 150 feet long, it was built to support the weight of a 16-ton bomb or 124 armed men (*The Fresno Bee*, 16 January 1945:3A).

After the war, the Fisher Cleveland Aircraft Plant became the Cleveland Tank Plant due to the production of army tanks at the facility. The Cadillac Tank Plant employed 6,000 people during its height of production. The facility continued to be utilized by the military during the Korean War. After manufacturing the tanks for two years, a problem was discovered with a gun mechanism; therefore, the army could not accept the tanks. Following the discovery, General Motors created the Walker Bulldog, a new gun sight, which was used in Korea by 1953 and produced until 1955. In 1959, the plant closed, only to reopen a year later when Cadillac was contracted to build self-propelled T-195 and T-196 howitzers and M-114 armed personnel carriers (ECH 2017mm). While in operation, the Cleveland Tank Plant built the M-551, a 16-ton Sheridan tank. The tank’s unique design made it light weight and easily transported by air. When the contract ended in 1972, the Defense Department decided to sell

the facility. In 1977, it was bought by Park Corporation of Charleston, West Virginia, who intended to utilize the building as an international trade mart; however, the mart was never developed, and instead opened as the I-X Center in 1985. The Center was, “billed as the largest single-building exhibition facility in the world. Adding to this in 1993, the Park Corp. opened 50,000 sq. ft. of space in the facility’s basement to be used for mid-sized exhibitions” (ECH 2017mm). Today the I-X Center is an event venue and convention center.

10.6 NASA

The National Aeronautics and Space Administration (NASA) John H. Glenn Research Center at Lewis Field in Cleveland was founded in 1941 and became vital to the US aerospace program. The Center was the laboratory for the National Advisory Committee for Aeronautics (NACA), where it, “contributed to the solution of engine-cooling problems on the Super Fortress (B-29) and conducted research on aviation fuels and icing problems during World War II. The development of the jet engine at the facility was a major contribution to the military. When the Altitude Wind Tunnel was completed in 1944, it was considered the most advanced facility of its kind in the world” (ECH 2017nn). The center went through transformations in 1947 and 1948, first changing its name to the Flight Propulsion Research Laboratory, and then to the Lewis Flight Propulsion Laboratory. The Lewis Flight Propulsion Laboratory primarily studied ramjet engines for missile applications, rocket propellants, and different ice prevention options. During the 1950s, the center primarily focused on supersonic aerodynamics. In 1958, the center became the NASA Lewis Research Center when NACA became part of NASA. The NASA Lewis Research Center was essential to the Mercury and Apollo programs through its research of liquid hydrogen rocket fuel. Also in 1958, the center contributed to the travel to the moon through development of upper-stage launch vehicles. The NASA Lewis Research Center created projects such as the Quiet Engine Program and the Integrated Propulsion

Control System. In 1999, the center changed its name once again to the John H. Glenn Research Center at Lewis Field (ECH 2017nn).

10.7 US Coast Guard

Cleveland's US Coast Guard Station located on the West Pier of the Cuyahoga River operated from 1876 until 1976. The US Coast Guard Station was founded in 1915 as the predecessor to the US Life-Saving Service established in 1876; although, government life-savings boats were in use in 1854 (ECH 2017oo). In 1940, architect J. Milton Dyer designed the modern concrete Art Deco style building at Whiskey Island. When the structure was completed it was called the "most beautiful in the nation" (Busta-Peck 2011). Dyer was a well-known Cleveland architect, creating other works such as Cleveland's City Hall, Tavern Club, and the Brown Hoist building. Dyer's design for the US Coast Guard Station is a stark contrast to his former, more traditional, Beaux-Arts style designs. The streamlined design of the US Coast Guard Station includes a boathouse, garage, observation tower, and operation building. The group of buildings creates a U-shape around a circular drive. In 1976, the US Coast Guard terminated its use of the building, which the City of Cleveland Division of Water then purchased. A boat station located at E. 9th Street became the new location for the US Coast Guard Station in Cleveland. In 1984, the building was no longer in use and was put up for auction (ECH 2017oo).



Figure 10-2. 1964 aerial view of US Coast Guard Cleveland Harbor Station (Michael Schwartz Library, Cleveland State University)

Cleveland's role in military and defense during wartime contributed to a strong allegiance both locally and nationally. Military involvement also reflected on the availability of jobs in Cleveland. Due to a high production area for equipment, the industries provided jobs for a large population of Clevelanders as well as new arrivals to the region. Involvement in the military did not terminate following World War II. During the Korean War, Cuyahoga County's population and industry increased. "In 1952 the total payrolls of Cleveland's manufacturing industries exceeded the combined payrolls of the industries of 13 states" (ECH 2017pp). Despite the apparent success, the county was unknowingly on the brink of a decline. Although there was virtually no unemployment, downtown Cleveland's buildings hinted at a demise. In 1951, Bernard W. Mulcahey stated, "65 percent of 561 downtown buildings could be closed for fire violations" (ECH 2017pp). During the Korean War, 1,161 out of the 44,000 Cuyahoga residents that served in the military lost their lives. Companies involved in World War II, such as the White Motor Co., continued to have contracts with the military. Steel producers experienced so much demand that many plants had to expand. In 1951, Republic Steel began a \$75 million expansion and American Steel & Wire built a necessary \$10 million blast furnace (ECH 2017pp).

Today, Cuyahoga County remains home to the Glenn Research Center, which continuously improves the understanding of space and develops innovative technology. Many of the structures that were built during World War II to house production facilities are now used as storage, or in cases such as the former Cleveland Tank Plant, event venues. Although Cleveland's industrial past has declined, manufacturing remains prominent.

10.8 Military Survey Results and Recommendations

Fieldwork did not result in any previously unrecorded military/defense resources dating from the mid-century period in Cuyahoga County. This is partially due to the previous survey work conducted at the NASA Glenn Research Center, which did not need to be updated. Plant closures also resulted in the loss of other military/defense-related facilities.

Additional research into the locations and building conditions of these resource types may lead to future surveys of military/defense-related resources throughout the county.