"This Victory is Partly Ours": How the Bombing of Japan Built Post-WWII Seattle

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12 December 2016

Introduction

On August 10, 1945, the *Seattle Daily Times* credited Seattle for a part in an emerging victory in the Pacific war. That morning, the Japanese government had communicated to Allied leaders its intention to surrender. Surrender would not be official until early September, but the *Times* reported that the people of Washington state should be "justifiably proud" of producing "the three most spectacularly destructive weapons of the Second World War—the atomic bomb, Flying Fortress, and its big brother, the B-29."[1] Radioactive material for the top secret Manhattan Project had been produced at the Hanford complex on the bank of the Columbia River since 1943, and both the B-17 Flying Fortress and the immense B-29 Superfortress bombers had been designed and constructed in Seattle. Yet the article looked beyond the accomplishments of the moment toward the future, asking what kind of "profound and enigmatic effect" Seattle's wartime growth would have on the state as its industries reverted to peacetime operations. By the time of Japanese surrender, wartime operations had already transformed the city. War had also transformed many of Japan's cities. The B-29 bombers that Boeing's engineers and workers in Seattle had produced—so crucial to the city's wartime growth—dropped 147,000 tons of bombs as well as two atomic bombs on Japan's urban centers.[2]

Through Boeing, the intensive bombing campaigns of the Pacific theater that destroyed Japanese cities contributed to the growth and transformation of Seattle. Production of the B-29 and other wartime industries led to higher monetary investment in the city, population growth, and greater inter-racial and inter-ethnic integration in Seattle, resulting in significant social transformation. Wartime industry also necessitated the construction and reorganization of

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[1] Ross Cunningham, "This State Produced War's 3 Most Destructive Weapons," *The Seattle Daily Times*, August 10, 1945, B.

[2] R. Cargill Hall, *Case Studies in Strategic Bombardment* (Washington, D.C.: Government Printing Office, 1998), 366.

housing and the acceleration of transportation reform in Seattle, physically restructuring the city and its outskirts. Thus, as Boeing built the B-29, it also built postwar Seattle.

Up through the present moment, scholarship on the B-29 Superfortress has been dominated by the field of history of technology and focuses on the plane's engineering and performance in war rather than the process of its production.[3] Similarly, historians have treated the wartime bombing of Japan almost exclusively as a matter of military and political history.[4] This paper aims to demonstrate that the massive bombing campaign over Japan and the dropping of the atomic bomb in Hiroshima and Nagasaki did more than destroy Japanese cities and Japanese lives. The planes that delivered destruction to Japan had tangible and lasting impacts on US cities as well.

Building a Superfortress

The airplane that would become the B-29 Superfortress had been in the works at since for more than a year by the time the Army Air Forces began making inquiries. On February 5, 1940, Philip G. Johnson, President of the Boeing Aircraft Company received a large brown envelope from the US Army Air Forces Materiel Command at Dayton Ohio calling for a new, larger, and faster bomber than even the B-17. Publicized during testing in 1937 as "the fastest and longest ranged bomber ever built," the four-engined B-17 "Flying Fortress" had a long range of 2,400

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[3] For overviews of the design of the B-29, see: Thomas Collison, *The Superfortress is Born: The Story of the Boeing B-29* (New York: Duell, Sloan and Pearce, 1945) and Paul Kennedy, *Engineers of Victory: The Problem Solvers Who Turned the Tide in the Second World War* (New York: Random House, 2013).

[4] Several books offer detailed histories of the bombing campaign within military or political frameworks, including: Michael Sherry, *The Rise of American Air Power: The Creation of Armageddon* (New Haven: Yale University Press, 1987), Kenneth P. Werrell, *Blankets of Fire: U.S. Bombers over Japan during World War II* (Washington: Smithsonian Institution Press, 1996), Richard B. Frank, *Downfall: The End of the Imperial Japanese Empire* (New York: Penguin Books, 1999), and Tsuyoshi Hasegawa, *Racing the Enemy: Stalin, Truman, and the Surrender of Japan* (Cambridge: Harvard University Press, 2005).

miles.[5] The new bomber needed to be capable of ranging 5,333 miles at high altitude and at high speed. The deadline for the War Department to receive preliminary designs was in just thirty days.[6] Boeing responded within three weeks with Model 341. Model 341, a bomber with greater range and increased bomb capacity than any previously produced, first appeared on drawing boards in Boeing Plant One in Seattle in August 1939.[7] Model 341 was not just larger but sleeker and more aerodynamic than existing bombers. Its wing skin joints were smooth and all external rivets, drains, vents, lights, or other external pieces were designed to be flush or streamlined in order to minimize drag.[8]

Boeing's Model 341 soon gave way to a new model, numbered 345. The breakout of actual war in Europe put pressure on Boeing to turn their new bomber into a fighting airplane, complete with superb firepower and leak-proofed tanks, both of which added significant weight.[9] Air Forces assigned Model 345 the designation XB-29 when the War Department authorized an initial payment of $85,652 for Boeing to assemble further design data and construct models in early June, just after the fall of Paris.[10] The designation XB-29 meant that the design was experimental and the twenty-ninth bomber design purchased by the Army. The Army Air Forces named it the Superfortress, after the Boeing B-17 Flying Fortresses already being produced en masse for the US military. Boeing delivered all three contracted XB-29s hand-built at Seattle

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[5] "Army Receives First of Giant New Bombers," *Washington Post*, January 17, 1937, 15; Michael S. Sherry, *The Rise of American Air Power: The Creation of Armageddon* (New Haven: Yale University Press, 1987), 52.
[6] Collison, *The Superfortress is Born*, 21.
[7] *Ibid.*, 35.
[8] *Ibid.*, 36.
[9] *Ibid.*, 38.
[10] *Ibid.*, 40.

before the end of December.[11] By that time, Boeing had expanded its special research department for the new bomber to 1,900 employees.[12]

The new bomber had to be designed with an unskilled workforce in mind. With war on the horizon, major industries would soon be faced with a massive labor shortage, nor would Boeing be able to train skilled engineers fast enough to replace those who would enlist or be drafted. In order to increase efficiency in production and lower costs, Boeing's engineers designed the B-29 to have a main fuselage in the shape of a straight cylinder. The design introduced new challenges to pressurizing the main cabin, but it meant that corresponding parts for the bomber could be built in various locations and shipped to final assembly lines, allowing the plane to be built quickly by an inexperienced work force.

Difficulties during design, including how to pressurize a cabin that was not separate from the bombing bay, and casualties during testing nearly led to cancelling the program. One historian called the fraught period of testing and early production between December 1943 and 1944 the "hinge period for Allied strategic bombing."[13] Testing, originally scheduled for July 1942, had to be delayed due to engine problems with the Wright R-3350 engine, the largest displacement engine available at the time and the only one capable of powering the massive Superfortress bomber but was plagued by unreliable reduction gears and accessory drive shafts.[14] Boeing's research team worked to solve the B-29's many issues with the company's chief test pilot, Eddie Allen, who had tested aircraft during the First World War before joining Boeing in 1927. On February 18, 1943, nine minutes into a test flight for the B-29, he reported a fire in the number one engine and initiated a return to the Boeing field. The build-in fire extinguisher

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[11] Werrell, *Blankets of Fire*, 72.
[12] Richard C. Berner, *Seattle Transformed: World War II to Cold War* (Seattle: Charles Press, 1999), 56-57.
[13] Kennedy, *Engineers of Victory*, 325; Werrell, *Blankets of Fire*, 68-69.
[14] Werrell, *Blankets of Fire*, 72.

system temporarily put out the fire, but it soon reignited and spread to the wing. One minute after the tower picked up an intercom message on the aircraft telling the pilot to "get this thing down in a hurry," the plane crashed into the fifth floor of a meat-packing plant just three miles from the airfield, killing the entire eleven-man crew, nineteen plant employees, and one Seattle fireman. The crash raised doubts about the aircraft and immediate action was taken to stop fuel leaks, improve the fire-extinguisher system, and modify the engines, but Boeing had to make do with the "inadequate and unreliable" Wright R-3350 engine through 1945.[15] The first B-29 in the mass production phase came off the assembly line in June 1943 in Wichita. The 175th appeared in March 1944, but the planes still hadn't flown any missions, awaiting parts and modifications. Finally, the first one flew for India on March 31.[16]

Between the design and production of the B-29 and the simultaneous rapid production of the B-17, Boeing brought a windfall of federal funding into Seattle even before the United States entered the war. During the defense buildup period from September 1939 through December 1941, federal assistance helped the city's industries to recruit workers for Boeing, shipyards, foundries, fabricating plants, government offices, and more.[17] Shipbuilding and aircraft production were Seattle's two main industries when the US entered the war at the end of 1941. Shipbuilding had been a revitalizing force in the region's economy during the Great Depression and remained vital through the 1940s, but over the course of the war two-thirds of the $1.5 billion Seattle received in war contracts was for airplanes.[18]

Part of that funding went to build new facilities at Boeing. The B-29's incredible size posed serious problems for its production as well as its utility in the war. The 141-foot wingspan

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[15] Werrell, *Blankets of Fire*, 73; Kennedy, *Engineers of Victory*, 325.
[16] Berner, *Seattle Transformed*, 57.
[17] *Ibid.*, 8.
[18] *Ibid.*, 45-46.

would not fit in Boeing's existing plants and the B-29's takeoff weight of 120,000 pounds meant it needed longer and wider runways than the planes that preceded it. Thus, development of the B-29 funded the expansion of the Seattle Boeing plant and the construction of a new plant in Renton, five miles south, funded by the federal Defense Plant Corporation.[19]

Some of that expansion created gendered and racially segregated facilities at the plants. In order to minimize racial tensions, Boeing plants started to include segregated lunchrooms and toilets during the war.[20] A union representative, James Duncan, suggested in April 1942 that the company should build a separate plant exclusively for African American employees.[21]

The federal government invested money in the B-29 because it presented new possibilities in air warfare. Combined with new bombing strategies under the command of Curtis LeMay, the Superfortress was able to wreak unprecedented destruction on Japan. The B-29 was the only bomber in the war capable of carrying out a sustained bombing campaign against the Japan home islands. It was bigger than any other bomber that operated on a large scale during the war, had better performance and capability, and standardize new innovations in remote-controlled armament and pressurized cabins. Its range and adaptability were unmatched.[22] When LeMay took over the XXI Bomber Command in 1945 he initiated a new series of missions where B-29s would attack at night at lower altitudes, which would permit greater bomb loads per aircraft. Bombing missions would also no longer target individual facilities but rather entire cities. Though he demonstrated initial resistance, LeMay also turned to incendiary bombing. The Army Air Forces favored incendiary bomb was the M-69, designed specifically for use against

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[19] Polly Reed Myers, "Boeing Aircraft Company's Manpower Campaign during World War II, *Pacific Northwest Quarterly* 98, no. 4 (Fall 2007), 183.
[20] *Ibid.* 190.
[21] *Ibid.*
[22] Werrell, *Blankets of Fire*, 82.

the "paper cities of Japan," where traditional wooden buildings were particularly susceptible to fire.[23]

Transforming Seattle's People

The Second World War expelled Seattle's Japanese population and initiated formalized segregation in the city, but the influx of new populations eager to work at Boeing's expanded facilities, federally mandated integration of wartime industries, and activism specifically targeting Boeing ultimately lead to great inter-racial and inter-ethnic integration and transformed Seattle's social landscape.

Prior to the war, Japanese and Native Americans were the largest non-white ethnic groups in Seattle, but by 1950 that position had gone to African Americans.[24] Seattle's old Japantown, or *Nihonmachi*, had been established some time before 1891, when part of Dearborn Street was known as Mikado Street. As recorded in the 1920s, Seattle's Japantown extended from 4th along Main to 7th, with clusters of businesses and residences along Jackson, King, Weller, Lane, and Dearborn streets. Japantown housed a robust ethnic community and contained temples, churches, language schools, theaters, restaurants, boarding houses, bathhouses, and community halls.[25] By the beginning of the First World War, Japanese farmers supplied a majority of Seattle's vegetables and made significant contributions to the city's supply of fruit,

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[23] Frank, *Downfall*, 62-64.
[24] Quintard Taylor, "The Great Migration: The Afro-American Communities of Seattle and Portland during the 1940s," *Arizona and the West* 23, no. 2 (Summer 1981), 125.
[25] Gail Dubrow, "Panama Hotel National Historic Landmark Nomination Form," in *Washington Information System for Architectural and Archaeological Records Data (WISAARD)*, 4, 18-19, July 18, 2002, accessed August 15, 2016.

occupying 70 percent of the produce stalls in the now-historic Pike Place Market.[26] Seattle's entire Japanese and Japanese American population, numbering nearly 7,000, disappeared in a matter of weeks in April and May 1942. [27] Most of Seattle's Japanese residents would be incarcerated in Minidoka, Idaho for the duration of the war.

The US government justified the incarceration of Japanese and Japanese Americans from the West Coast in concentration camps as a matter of "military necessity."[28] The prevalence of defense industry manufacturing, such as Boeing, in West coast cities led officials such as General John L. DeWitt, commanding general of the Western Defense Command who categorized all Japanese as "an enemy race" to urge mass evacuation of all Japanese Americans from the region on the basis of urgent military danger.[29] President Roosevelt's Executive Order 9066, issued February 19, 1942, authorized the secretary of war, Henry L. Stimson, to designate "military areas," interpreted broadly to include the entire Pacific coast of the continental United States, from which particular persons—in this case Japanese Americans—could be excluded. [30]

Mass expulsion of the city's *Issei* (first-generation) and *Nissei* (second-generation) residents created an incredible gap in the middle of Seattle's social landscape, exemplified by the still-standing Panama Hotel, a single-room-occupancy hotel on South Main Street at the former center of Japantown built in 1910 and designed by Sabro Ozasa, the first Japanese architect to practice in Seattle. Not only does the Panama Hotel's basement contain the only intact (though now defunct) public Japanese bathhouse, the Hashidate-Yu, but the basement also stores dozens

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[26] Gail Lee Dubrow, "Asian American Imprints on the Western Landscape," in *Preserving Cultural Landscapes in North America*, ed. Arnold R. Alanen and Robert Melnick (Baltimore: Johns Hopkins University Press, 2000), 155.
[27] Berner, *Seattle Transformed*, 48.
[28] Mae Ngai, *Impossible Subjects: Illegal Aliens and the Making of Modern America* (Princeton, Princeton University Press, 2004), 176.
[29] *Ibid.*
[30] *Ibid.*

of packed trunks left there by Japanese Americans on the eve of expulsion who never returned to reclaim their possessions.[31]

African Americans, along with thousands of other Americans, moved to Seattle to pursue jobs in the city's wartime industries. As early as May 1940, Seattle's black community had formed The Committee for Defense of Negro Labor's Right to Work at Boeing Airplane Company.[32] With the entry of the United States into the war, Seattle's public schools adapted their curriculums and vocational training programs to prepare students for factory employment.[33] Boeing in particular had a hard time recruiting and maintaining a sufficient workforce because even though Boeing's wage scale was the highest in the aircraft industry, wages at the shipyards were still much higher and the company had to compete with the shipyards for employees. A general wartime labor shortage exacerbated these conditions, so in 1942, the War Manpower and Civil Service commissions began recruiting workers for wartime industries in Seattle. Eventually, in wartime Seattle, older men, women, and African Americans would replace approximately 69,000 local men who joined the armed forces.[34] More than just replacing absent laborers, Seattle's population grew significantly between 1941 and 1945.

Racial and gender discrimination within Boeing made recruiting and retaining a wartime work force especially difficult. The company's white male employees actively campaigned to restrict female and minority recruitment because they feared it would "bring down wages and hinder union effectiveness." The company would demonstrate a clear preference for hiring skilled white men throughout the duration of the war.[35] In 1941, under pressure from African

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[31] Dubrow, "Asian American," in *Preserving Cultural Landscapes*, 155; Dubrow, "Panama Hotel," in *WISAARD*, 4-9.
[32] *Northwest Enterprise* (Seattle), May 31, 1940.
[33] Berner, *Seattle Transformed*, 50.
[34] *Ibid.*, 47.
[35] Myers, "Boeing Aircraft Company," 185.

American activists nationwide, President Franklin D. Roosevelt had issued Executive Order 8802, establishing the Fair Employment Practices Committee (FEPC) calling for fair employment practices in wartime labor and industry and a halt to discrimination based on race, creed, color, or national origin in plants, such as Boeing, holding defense contracts.[36] Yet Boeing resisted changing its discriminatory hiring policies, blaming the International Association of Machinists and their Local 751 chapter. Boeing's contract with IAM mandated that all employees be union members and disallowed the hiring of white women until 1941 and African Americans until 1942.[37] A. Philip Randolph, a nationally recognized spokesperson for black working-class interests and later vice president of the ALF-CIO, criticized Boeing Aircraft Company in October 1941 for being "one of the most conspicuous examples in the United States of race discrimination," stating that the company "from the very beginning of the national-defense emergency has refused to employ Negroes."[38] Boeing and the union eventually relented to federal pressure, but one union official, responding to the hiring of African Americans, made his reluctance clear: "We resent that the war situation has been used to alter an old established custom and do not feel it will be helpful to war production."[39] Boeing and the Local 751 union finally allowed nonblack minorities to acquire work permits in 1941 and extended the permits to African Americans in April 1942.[40]

Between 1940 and 1950, Seattle's black population grew from 3,789 to 15,666, an increase of more than 300 percent, not enough to alleviate the war's labor shortages, but more

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[36] Executive Order No. 8802, June 25, 1941, General Records of the United States Government, Record Group 11, National Archives.
[37] Myers, "Boeing Aircraft Company," 185.
[38] *Ibid.*, 186-87.
[39] Taylor, "The Great Migration," 111.
[40] Myers, "Being Aircraft Company," 187.

than enough to change the city.[41] In response to Seattle's growing and visible African American population an increasing number of "white only" signs began appearing in restaurants, theaters, motels, and recreational facilities across the city. The *Northwest Enterprise*, a local African American newspaper, carefully tracked incidents of discrimination among businesses and housing through the course of the war.[42] Wartime labor migration of African Americans to Seattle let to increased racial tensions, which manifested in the expansion of segregated facilities. Yet, at the same time, migration resulted in an increase of black political influence and the strengthening of civil rights organizations.

World War II provided an opportunity for the National Association for the Advancement of Colored People (NAACP) to expand its operations, both in Seattle and nationwide. The NAACP began targeting Boeing to promote workplace integration as early as October 1940, when Thurgood Marshall sent a letter after Boeing announced plans to expand the Seattle plant. "We are striving through our branches to secure our share of employment in those plants receiving Government contracts," he wrote. [43] During the war, Seattle's NAACP branch grew from a membership of 14 to approximately 200 members by 1944. Likewise, the Seattle Urban League, another organization for African American activism, doubled its membership and staff in the early 1940s. With wartime growth, both organizations also gained new and more aggressive leaders, such as E. June Smith and Phillip Burton, local black attorneys who became involved with the NAACP and initiated suits against discriminatory practices and lobbied for stronger state laws protecting civil rights both during and after the war.

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[41] Taylor, "The Great Migration," 109.
[42] See *Northwest Enterprise*, March 8, 1940; *Northwest Enterprise,* December 16, 1942; *Northwest Enterprise,* March 6, 1945; *Northwest Enterprise*, March 27, 1945; *Northwest Enterprise*, May 8, 1945.
[43] Myers, "Boeing Aircraft Company," 186.

The nature of black employment in Seattle changed as well as the quantity. In the prewar years, the majority of Seattle's African American population had been stewards, cooks, longshoremen, unskilled laborers, and domestic servants. By the end of the war, African Americans had become skilled industrial workers at Boeing and other manufacturing plants and found jobs as government employees.[44]

As Seattle's population continued to grow and change in early 1945 in response to wartime production at Boeing and other industries, the Army Air Forces of the United States had escalated the bombing campaign against Japan's urban population. On the night of March 9, 1945, more than 300 Superfortresses bombed Tokyo with 1,665 tons of bombs from altitudes ranging from 4,9000 to 9,200 feet. The target was a 10-square-mile area composed of three of the most densely populated districts in the world, with between 80,000 to 135,000 people per square mile. [45] Accounts from survivors describe "huge pillars of orange-red flame spurted high into the sky, [with] searchlights probing the sky, while the fires leapt unchecked from house to house. The very streets were rivers of fire. Everywhere one could see flaming pieces of furniture exploding in the heat, while the people themselves blazed like match sticks."[46] The single night of bombing left one million people homeless. Casualty figures range from 80,000 to more than 100,000 dead, making the March 9 Tokyo fire raid one of the deadliest of all time.[47] General Henry "Hap" Arnold of the Army Air Forces congratulated LeMay's crew as having "the guts for anything."[48] Ten days later, Arnold added, "A study of the Tokyo attack of March 10 and the knowledge of the fact that by July 1 you will have nearly a thousand B-29s under your control, leads one to conclusions which are impressive even to old hands at bombardment operations.

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[44] Taylor, "The Great Migration," 111.
[45] Werrell, *Blankets of Fire*, 160-61; Frank, *Downfall*, 65-66.
[46] Werrell, *Blankets of Fire*, 162.
[47] *Ibid.*, 163.
[48] Frank, *Downfall*, 67.

Under reasonably favorable conditions you should then have the ability to destroy whole industrial cities should be required."[49] The Army Air Forces hit Osaka, Japan's second largest city with a population of 3.5 million, on the night of March 14. Three days after that, the B-29s bombed Kobe.[50]

Transforming Seattle's Landscape

The history of Seattle's landscape is one of dramatic change. The city sits on three different earthquake zones and over the past several million years earthquakes have continuously shaped and reshaped the geography at the southeast edge of the Salish Sea. Approximately 1,100 years ago, a magnitude seven earthquake along the Seattle Fault, stretching twenty-five miles from Restoration Point on Bainbridge Island to Lake Sammamish, pushed the floor of the Duwamish delta near what is now Boeing Field twenty feet up into the air.[51] As the modern city of Seattle began to take a shape current residents might recognize in the early twentieth century, a series of engineers and public officials became possessed by what one historian has called "regrading mania."[52] In a matter of decades, the people of Seattle had filled in the tide flats, built an immense railroad tunnel, flattened many of the city's largest hills, converted the Duwamish River into the tightly controlled Duwamish Waterway, and built Harbor Island. The changes that industry prompted in wartime Seattle—in particular the construction of federal housing projects and transportation reform—were less dramatic but nonetheless important for Seattle's boom and bust cycle of postwar growth. In some key ways the problems the workers who worked in

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[49] *Ibid.*
[50] Werrell, *Blankets of Fire*, 164-65.
[51] David B. Williams, *Too High and Too Steep: Reshaping Seattle's Topography* (Seattle: University of Washington Press, 2015), 21.
[52] Matthew Klingle, *Emerald City: An Environmental History of Seattle* (New Haven: Yale University Press, 2007), 185

Boeings plants building B-17s and B-29s presaged the city's current housing and transportation crises.

Seattle's dozens of regrade projects ended more than a decade before World War II with the onset of the Great Depression, but their consequences were unavoidable. Designed and executed with the idea of improving the quality of life for the city's residents and boosting economic opportunity, the re-grading and transportation projects of the 1920s and 1930s had intensified, not relieved, urban poverty.[53] These projects for civic improvement had pushed the poor and ethnic residents of the city—the Japanese, Greeks, Italians, Russians, Chinese, Filipinos, and eastern European Jews—quite literally to the margins and gutters where they suffered from overcrowding and poor sanitation. The most glaring example when Boeing's engineers began working in earnest on the B-29 was multiethnic shack town of approximately 500 shanties along the East Waterway of the Duwamish River, called "Hooverville."[54]

As federal funding boosted Seattle industry during the defense buildup period from September 1939 through December 1941, city officials worked out plans to remove Hooverville in anticipation of a housing shortage. A Works Progress Association survey in 1939-40 stated that 28.5 percent of the city's 86,086 "residential structures" were "substandard" and 17.437 lacked adequate sanitary facilities.[55] Moreover, the United States Coast Guard had their eyes on the docks beside Hooverville for a new slip and the Port of Seattle wanted to maximize the waterfront for industry.[56] The new Seattle Housing Authority organized a "shack elimination committee" in early 1941.[57] This would not be the first attempt to eliminate the shantytown.

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[53] *Ibid.*
[54] *Ibid.*, 195-96.
[55] *Ibid.*, 198.
[56] *Ibid.*
[57] *Ibid.*

Police and health inspectors had set fire to Hooverville multiple times between 1929 and 1931 before finally giving up.[58]

Hooverville was torched for the last time in April 1942.[59] In its place, the Seattle Housing Authority intended to build integrated housing for low-income families who would help power wartime industry. They had already succeeded in building one of the nation's first integrated public housing projects, Yesler Terrace, within sight of Hooverville.[60] Integrating Yesler Terrace was not difficult due to its location in a neighborhood that already included Asian, poor white, and African American residents. After the success of Yesler Terrace, the first director of the housing authority's Board of Governors, Jesse Epstein, secured federal funding to build similar housing projects elsewhere in the city, where Epstein did encounter resistance from white residents for its integrated projects in West Seattle, Sand Point, Holly Park, and Rainer Vista.[61]

Integrated housing was important, because the high rate of westward migration of African Americans seeking wartime employment resulted in overcrowding in black communities across the urban West due to combination of housing shortages and restrictive covenants. Such problems were less severe in Seattle than other West coast cities because black migrants were relatively small in number and arrived relatively late, largely in 1944 and 1945.[62] In the end, Seattle would be the only city in the Pacific Northwest that did not segregate blacks in its public housing projects.[63] That did not mean, however, that the city was free from racial covenants that prevented nonwhite residents from purchasing or renting housing in designated white neighborhoods. In 1947, Katherine I. Grant Pankey wrote, "Seattle, like other cities, has an

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[58] *Ibid.*, 195-96.
[59] *Ibid.*, 198.
[60] *Ibid.*, 199.
[61] Taylor, "The Great Migration," 113-14.
[62] Quintard Taylor, *In Search of the Racial Frontier: African Americans in the American West, 1528-1990* (New York: W.W. Norton, 1998), 269.
[63] Taylor, "The Great Migration," 113.

explicit policy of segregation." She continued, "a potent weapon with which threatened 'invasions' have been stopped is the use of the restrictive covenant."[64] By 1944, more than 5,000 African American workers were living in the same buildings that had housed only 3,700 before the war. They crowded into the integrated residences along Jackson Street, Madison Hill, Cherry Street, and Yesler Terrace.[65] Restrictive covenants and racial discrimination meant that most of the thousands of African Americans who moved to Seattle for work during the war would settle in the Central District, but many also moved into the empty homes and businesses left by the recently expelled Japanese community. The *Northwest Enterprise*, Seattle's largest African American newspaper, reported that one black businessman's commercial properties had increased 25 percent after Japanese removal.[66] Seattle's Japantown was gone.

Across the country, World War II meant crowded trains, old buses and trolleys pressed into service for cities dealing with staggering loads of passengers conforming to strict rationing of gasoline and tires. Seattle had been due to phase out its old streetcar trolleys in February of 1941 and replace them with trackless electric trolleys. The trolleys were removed from their steel tracks, which were then removed and recycled as well. Yet the new trolley system was inadequate to deal with the crowds of passengers with the onset of wartime rationing. Some of the city's biggest employers, including Boeing, encouraged ride sharing and staggered work shifts to relax the pressure on public transportation, but when the Office of Defense Transportation discovered in mid-1942 that only two-thirds of Seattle's employers were complying with the sharing and shift staggering programs they threatened to cut off the city's access to more public transportation system equipment. Over the course of the war, according to one historian, Seattle's public transportation system carried "100 percent of its capacity and 200

[64] Klingle, *Emerald City*, 187.
[65] Taylor, "The Great Migration," 113.
[66] *Ibid.* 125.

percent of what it was designed for," teaching the city's residents the value of public transportation.[67]

In contrast to the tremendous earth-moving transportation reforms of the early part of the twentieth century, Seattle experienced relatively little roadwork during wartime, but the concentration of industry to the city's south put pressure on Seattle to build a viaduct over Spokane Street near the southern end of the city. Still in the buildup period of the war, Seattle City Council gathered $968,000 by December 1941 from the WPA, the Bureau of Public Roads, and the railroads. Yet construction had to be halted because the War Production Board rejected the City Council's steel application. They had enough, City engineers decided, to complete the west end of the viaduct near West Seattle, using wood instead of steel wherever they could as a temporary measure, and the project opened in January 1942.[68]

Boeing threw its not inconsiderable weight behind the push to upgrade the viaduct's priority rating in 1942 alongside Mayor William F. Devin, City Councilman Robert Jones, the Seattle Chamber of Commerce, the shipyards of Harbor Island, the Metal Trades Council, and Congressman Warren Magnuson, who held a key position on the Naval Affairs Committee. New housing and trailer parks near major industrial plants helped relieve some of the pressure on the city's transportation system, but approximately 30,000 Boeing and shipyard workers still regularly crowded the streets during shift changes just a few blocks from the viaduct's planned end point and highlighted the dire situation of Seattle's transportation crisis. The viaduct received priority rating and access to necessary construction materials and was finally completed in January 1944, near the peak of Boeing's wartime production.[69]

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[67] Berner, *Seattle Transformed*, 60-61.
[68] *Ibid.*, 61.
[69] *Ibid.*, 62.

In August 1945, Boeing was flying high. Its total sales for 1944 were in excess of $600 million and its Seattle plants had hit a peak employment of 31,750 on February 9 of that same year.[70] The company's B-29 Superfortress bombers were doing in Japan what no one had thought possible just a few years prior and presented a possible shortcut to a war that military planners had expected to extend through 1947.[71] Seattle's physical growth was limited by wartime rations and labor shortages, but the incredible success of the city's industries, particularly Boeing, pointed to a bright future. Yet between August 6 and 9, 1945, two Japanese cities would be virtually erased from the country's landscape. On August 6, seven planes departed for Japan from the US base in the Marianas: three B-29s acting as weather observers flew to Hiroshima, Kokura, and Nagasaki, two planes escorted the lone bombing plane—a special Silverplate series B-29 named the *Enola Gay*—to the target, one plane each for a group of scientists and photographers, and one more plane few to Iwo Jima, standing by in case the bomber experienced trouble.[72] Very early in the morning, at 2:45 A.M. local time, the *Enola Gay* took off, loaded with "Little Boy," an atomic bomb that had been loaded the afternoon prior. The *Enola Gay*'s escort followed at two-minute intervals. At 8:15 A.M. in Hiroshima, the *Enola Gay*'s crew, under command of Colonel Paul Tibbets, dropped the Little Boy on the city. Tibbets spoke to his crew on the interphone, saying, "Fellows, you have just dropped the first atomic bomb in history."[73] Little Boy's exploded approximately 1,900 feet above the courtyard of Shima Hospital. The explosion had a yield equivalent to 12,500 tons of TNT and the temperature reached 5,400°F, immediately creating a half-mile wide fireball. Of the city's 76,000 buildings,

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[70] Carlos A. Schwantes, *Going Places: Transportation Redefines the Twentieth-Century West* (Bloomington: Indiana University Press, 2003), 250; Myers, "Boeing Aircraft Company," 193.
[71] Kennedy, *Engineers of Victory*, 306.
[72] Hasegawa, *Racing the Enemy*, 179.
[73] *Ibid.*

70,000 disappeared.[74] Three days later, another Silverplate B-29, *Bock's Car*, dropped another atomic bomb on Nagasaki.

Conclusion

After the war, the people of Seattle had a new commitment to Boeing. Prior to the war, Seattle had not viewed military contracts with Boeing as a significant means of growth but that had changed by 1945. During the war, Boeing had become the biggest manufacturer in the state of Washington. After the war, Boeing continued to benefit from the expanded power of the new US Air Force, and Seattle joined forces with the company to lobby for funds to be spent on bombers in the fearful atmosphere of the Cold War. Even so, when the Army Air Forces cut its orders for B-29s on September 5, 1945, with the conclusion to peace negotiations with Japan, Boeing had to dismiss nearly 20,000 workers, more than half of the firm's Seattle workforce.[75]

Most of the jobs cut were those held by women, but nonwhite workers were also among the first to be laid off with the cancellation of government contracts at the end of the war.[76] Urban American Indians in particular suffered in the postwar years as federal Indian policy embraced forceful assimilation and cut resources for Native communities. "After the brief window of wartime opportunity," describes historian Coll Thrush, "life in Seattle was almost as bleak as ever for its Indian population—if not worse."[77] After the war, women were rarely employed in industry in Seattle.[78]

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[74] *Ibid.*, 179-80.
[75] Richard S. Kirkendall, "The Boeing Company and the Military-Metropolitan-Industrial Complex, 1945-1953," *The Pacific Northwest Quarterly* 85, no. 4 (October 1994), 137-38.
[76] Myers, "Boeing Aircraft Company," 193.
[77] Thrush, *Native Seattle*, 165.
[78] Myers, "Boeing Aircraft Company," 193.

Seattle's African American population fared better after the war, as the city's black community continued to grow and advocate for better protections and rights. Before the war, Native Americans and Japanese had been the Pacific Northwest's largest nonwhite groups, but African Americans clearly held that position by 1950.[79] Another 5,000 African Americans moved to Seattle between 1945 and 1950, many defense workers from elsewhere in the country who looked to take advantage of the city's continued manufacturing.[80] After the war, continued protests, especially by the Seattle Civic Committee, eventually led to full union membership for African Americans, protecting their employment at Boeing and other manufacturers in the city. In 1948, the median income of Seattle's black population averaged just ten percent below the national average for white families.[81] Moreover, in 1949, the state of Washington passed a fair employment practices statute. One year earlier, in 1948, the US Supreme Court ruling in *Shelley vs. Kramer* outlawed restrictive covenants and enabled black families to move into Seattle's fashionable Capitol Hill and Mount Baker neighborhoods for the first time.[82] For African Americans in Seattle, World War II paved the way for the civil rights struggles of the 1950s and 1960s.

The continued growth of postwar Seattle meant more housing and significantly contributed to suburban expansion. After the war, jobs at Boeing plants in Renton and Everett lured suburban home buyers away from downtown. At least one historian points to postwar housing growth as a major component of the confluence of interests between Boeing and other manufacturers, military leaders, and Seattle officials, writing: "Heralded by Boeing's success, Seattle became the nexus of the Pacific Northwest's 'military-metropolitan-industrial' complex. .

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[79] Taylor, "The Great Migration," 125.
[80] Taylor, *In Search of the Racial Frontier*, 274; Taylor, "The Great Migration," 114.
[81] Taylor, "The Great Migration," 114.
[82] *Ibid.*, 114-15.

. . Homebuilders ran for office, and politician-developers worked with Boeing executives to create new lakeside subdivisions adjoining the towns of Renton and Bellevue."[83]

The growth of suburbs contributed to the popularity of cars, creating a demand for faster and easier access to and through downtown Seattle and necessitating the spatial reorganization of the city. Thus, construction on the Alaska Way viaduct began February 1950 and the bypass opened April 4, 1953.[84] Considered an eyesore and a danger today, in 1953 the Seattle *Post-Intelligencer* called the viaduct a "royal necklace across the bosom of the Queen City of the Pacific Northwest."[85] The Alaska Way viaduct, like the one over Spokane Street completed in 1944, fit into a pattern of improved transportation corridors as a major driver for transforming Seattle's topography. "Improved transportation was the reason for the decades of railroad and tideflat-filling battles along our waterfront and is still a primary reason for how we view our topography, as illustrated by our constant struggles over transportation funding and projects such as the State Route 99 tunnel" explains geographer David Williams.[86]

The end of the war did not restore back Seattle's Japantown. As in other West Coast cities, the thousands of African Americans who moved West seeking employment during the war had moved into the evacuated Japanese communities and refused to relinquish their new homes after the war, forcing returning Japanese Americans to seek housing elsewhere.[87] After Internment, Seattle's Japanese community dispersed and Japantown was absorbed into the larger multiethnic community that is the International District today.

"Burned, blasted, and seared, Nagasaki looked like a city of death today as this Flying Fortress brought newspaper and radio reporters to see at low level for the first time the effects of

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[83] Klingle, *Emerald City*, 206.
[84] Williams, *Too High and Too Steep*, 196.
[85] "Alaskan Way Viaduct Rims Seattle's Waterfront," *Seattle P-I*, April 5, 1953.
[86] Williams, *Too High and Too Steep*, 138.
[87] Taylor, *In Search of the Racial Frontier*, 273.

the atomic bomb dropped on this Japanese port of 253,0000 [*sic*]," began an August 1945 article in the *New York Times*.[88] The two atomic bombings earlier in the month had obliterated approximately 4.4 square miles in Hiroshima and 1.8 square miles in Nagasaki. Initial estimates of fatalities, reported by the US Strategic Bombing Survey in 1946, reported between 70,000 and 80,000 dead at Hiroshima and more than 35,000 dead at Nagasaki, but more recent, and accepted, estimates place fatalities at around 130,000 to 140,000 in Hiroshima and 75,000 in Nagasaki.[89] Over the course of the war, the state of Washington's population grew 37 percent, including the tens of thousands of people who moved to Seattle to take part in wartime industries at Boeing and the shipyards.[90] Within the same period, Japan's civilian population fell by the hundreds of thousands, many of whom were victims of the American bombing campaign.

On August 10, 1945, Seattle's newspapers were full of news of Japan's offer of peace talks with the United States. "SURRENDER BID OFFICIAL; BIG 4 CONFERENCING!" proclaimed the front page of *The Seattle Daily Times*. Several pages in, the *Times* ran a story describing the reactions of the B-29 workers at Seattle's Boeing Plant 2: "The words 'victory' and 'peace' were on the lips of thousands of workers as they filed into Boeing Plant 2 today to work what they said they hoped was the last shift before they can celebrate a complete victory over Japan" described the anonymous reporter. One man told them the news was a tremendous morale builder: "Sure, we'll work until it's official, and how!" he said, "We feel like this victory is partly ours."[91] This one Boeing employee's feeling of responsibility for the victory in Japan is indicative of the key role that Boeing and their Seattle employees played in the war's bombing

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[88] W. H. Lawrence, "Dead Nagasaki Seen from a B-17; Atomic Bomb Wiped Out Center," *New York Times*, August 27, 1945, 1.
[89] John W. Dower, *Cultures of War: Pearl Harbor/Hiroshima/9-11/Iraq* (New York: W.W. Norton, 2010), 199.
[90] Berner, *Seattle Transformed*, 47.
[91] "B-29 Workers Cheer Reports of Peace Offer from Japan," *The Seattle Daily Times*, August 10, 1945, 9.

campaign. In the course of designing and producing B-29s, Seattle's World War II workforce transformed the city's social and physical landscapes, contributing to massive population growth and new racial and ethnic dynamics in the city, necessitating the construction and reformation of urban housing, and the acceleration of transportation reform both during and immediately following the war. The triangular relationship between Boeing, Seattle, and the wartime bombing campaign in Japan remains critical for understanding the development of Seattle as it exists today.

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Bibliography Essay

As I remarked in the introduction to this paper, through the present moment, scholarship on the B-29 Superfortress has been dominated by the field of history of technology and focuses on the plane's engineering and performance in war rather than the process of its production, particularly the political and social consequences of that production. Similarly, historians writing on the subject of World War II bombing of Japan, both conventional and atomic, have treated the matter almost exclusively as part of military and political history. Thomas Collison's *The Superfortress is Born: The Story of the Boeing B-29*, published at the end of the war in 1945, is the most comprehensive history of the design and construction of the B-29 Superfortress. Collison's book informs much of my description of how the B-29 came into being. The other history of technology approach to the B-29 that I have found both informative and useful is Paul Kennedy's *Engineers of Victory: The Problem Solvers Who Turned the Tide in the Second World War*, which examines how the B-29 worked with other technologies and military strategies to contribute to Allied victory in the Second World War. My discussion of the role of the B-29 in the Pacific theatre draws heavily on Kennedy, as well as Kenneth P. Werrell's *Blankets of Fire: U.S. Bombers over Japan during World War II* on the military history of the Allied bombing campaign in the Pacific as well as Richard B. Frank's *Downfall: The End of the Imperial Japanese Empire*. Both Werrell and Frank give some of the most complete accounts of the bombings and were invaluable to me as a researcher unaccustomed to working on military history.

Two of the most important works on which I drew my explanation of the social history of Seattle and the West during WWII were Richard C. Berner's *Seattle Transformed: World War II*

to Cold War and Polly Reed Meyers's article "Boeing Aircraft Company's Manpower Campaign during World War II." Much of my information on the relationship between the Boeing corporation and the people of Seattle comes directly from these works or from other sources to which these two texts directed me. My own project, however, differs greatly from those of both Berner and Meyer in that I have sought to bring together the military and history of WWII with the social and environmental history of Seattle as an important site in wartime production, and of B-29s bombers in particular.

The three by Quintard Taylor works cited in the following bibliography all deal with the social and political histories of Seattle's black community, examined at different scales. The oldest of these three, Taylor's 1981 article "The Great Migration: The Afro-American Communities of Seattle and Portland during the 1940s," is a comparative study of Portland and Seattle's black populations in the 1940s and uses these case studies to argue that this last phase of the national Great Migration of American Americans from the rural South to urban industrial centers in the North and West "paved the way for the struggle of the 1950s and 1960s," referring to the black freedom movement's push for desegregation, state and federal civil rights legislation, and equitable access to employment and education. Taylor's 1994 book *The Forging of a Black Community: Seattle's Central District, from 1870 through the Civil Rights Era* takes up a similar argument in greater detail, focused exclusively on Seattle but extending over a longer period of time. Taylor's last book on this list, *In Search of the Racial Frontier: African Americans in the American West, 1528-1990*, published in 2007, situates his earlier studies of Seattle and Portland within the broader context of western North America from the sixteenth century through the twentieth. Because Taylor's work addresses the social and political dynamics of black communities in urban places, his analysis are necessarily spatial. I drew on his

histories of Seattle not only for information of when African American workers arrived in during the war, but also for information on where and how they lived and worked. The politics of urban organization restricted racialized communities to particular neighborhoods in Seattle into the postwar period, as Taylor demonstrates and as I note in this paper.

Coll Thrush's *Native Seattle: Histories from the Crossing-Over Place* bridges the gap between socially-minded histories such as Berner's, Meyer's, and, to a lesser extent, Taylor's work and environmental histories of Seattle. The two works I have drawn from here in the latter category are recent works: Matthew Kingle's *Emerald City: An Environmental History of Seattle* and geologist David B. Williams's *Too High and Too Steep: Reshaping Seattle's Topography.* While Thrush neglects the war years of the 1940s, his work contributed here to the exploration of Seattle as a multiracial city and how its racial dynamics changed between the Depression years of the 1930s and the Postwar period. In *Emerald City*, Klingle combines both urban and environmental history to investigate why nineteenth and twentieth-century changes to Seattle's physical landscape generated, contrary to reformers purported goals, a parallel landscape of injustice. His overall argument is that the cost of Seattle's growth in the last century and a half has been paid by the city's poorest and most disadvantaged residents and by its wildlife, particularly Pacific salmon. I used Klingle's work, and that of Williams, to critically examine the history of Seattle's topography, how it changed in the mid-twentieth century, and what motivated those changes.