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Article Title: Nebraska's World War II Bomber Plant: The Glenn L Martin-Nebraska Company

Full Citation: George A Larson, "Nebraska's World War II Bomber Plant: The Glenn L Martin-Nebraska Company," *Nebraska History* 74 (1993): 32-43

URL of article: <http://www.nebraskahistory.org/publish/publicat/history/full-text/NH1993BomberPlant.pdf>

Date: 8/13/2013

Article Summary: The Martin-Nebraska plant assembled and later modified airplanes for the Army Air Forces. During four years of operation it regularly met production quotas and won merit awards.

#### Cataloging Information:

Names: Glenn L Martin, Don H Filbert, Dwight Griswold, G T Willey, Paul Tibbets

Nebraska Place Names: Fort Crook (later Offutt Air Force Base), Bellevue, Sarpy County

Keywords: B-26 Marauder, B-29 Superfortress, Glenn L Martin, *Enola Gay*, CIO, Strategic Air Command Headquarters, War Department, Peter Kiewit Sons, Miss Martin-Nebraska

Photographs / Images: Mary Duncan operating a turret lathe; Dorothy Blomquist operating a drill press; workers using special tools to build tail fins; Modifications Center's armament group working on machine guns; President Roosevelt, Nebraska Governor Dwight Griswold, and Glenn Martin touring the bomber plant, April 26, 1943; Major John W Mitchell with Martin plant equipment for boring holes in aircraft engine mounts; parts from B-29 fuselages being sorted for reshipment after the Martin plant closed; workmen removing engine nacelle from B-29; crew of the B-29 *City of Omaha*

# NEBRASKA'S WORLD WAR II BOMBER PLANT: THE GLENN L. MARTIN-NEBRASKA COMPANY

*By George A. Larson*

The Glenn L. Martin Company assembly plant and modification center near Omaha was an important part of Nebraska's contribution to America's World War II effort, producing over 1,500 B-26 Marauder medium bombers and more than 500 B-29 Superfortresses by war's end. It was commissioned in September 1940 when the U.S. War Department directed that two new assembly plants be built in the interior of the country (at least 200 miles from a coast) and was established on February 14, 1941, with the signing of a contract between the Martin Company and the U.S. government for the construction and operation of such a plant at Fort Crook (later Offutt Air Force Base). The Nebraska plant, owned by the War Department and operated under its supervision, was necessary because the Baltimore facility of the Glenn L. Martin Company could not supply all of the B-26 medium bombers required by the Army Air Forces.<sup>1</sup> The prospective lack of skilled labor in the Omaha area proved only a minor deterrent. The recent explosive growth of the aviation industry had drained every area of the country of skilled airplane plant workers.<sup>2</sup> Intensive training programs would be needed wherever new plants were built.

Fort Crook was established in 1896; in 1921 a flying field was constructed

at the post for use by government mail planes. The flying field was named Offutt Field in 1924 in memory of Omaha's World War I aviation casualty, Jarvis J. Offutt. Five hundred and three acres at Fort Crook were leased to the Martin Company early in 1941, and ninety-six additional acres were purchased later.<sup>3</sup>

The economic impact of the plant was an important concern of the Nebraska Advisory Defense Committee, established in 1941 by the state legislature to coordinate state and local defense efforts.<sup>4</sup> Committee members tried to assist civilian defense activities and projects such as the Martin-Nebraska bomber plant, which was expected to drastically increase the area's population, causing a lack of adequate housing and increasing rents. Most Nebraska towns were geared to maintain a permanent population and if it quickly increased, local capital and investment could not keep up with the resulting demand for housing and other facilities.

Bellevue, located just north of the confluence of the Platte and Missouri rivers in eastern Nebraska, was in 1941 the largest of five municipalities in Sarpy County. Its northern boundary was contiguous to Omaha. With 1,184 residents occupying 306 dwellings before the arrival of the Glenn L. Martin bomber plant, Bellevue soon faced an influx of 3,000 new residents who required new schools, streets, water and sewer lines, and police and

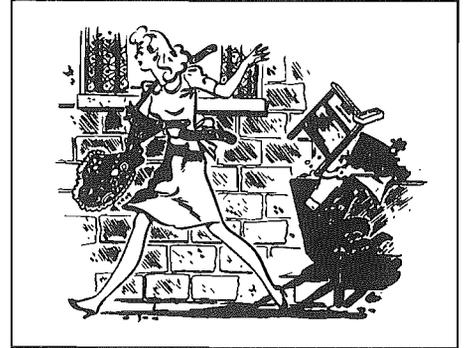
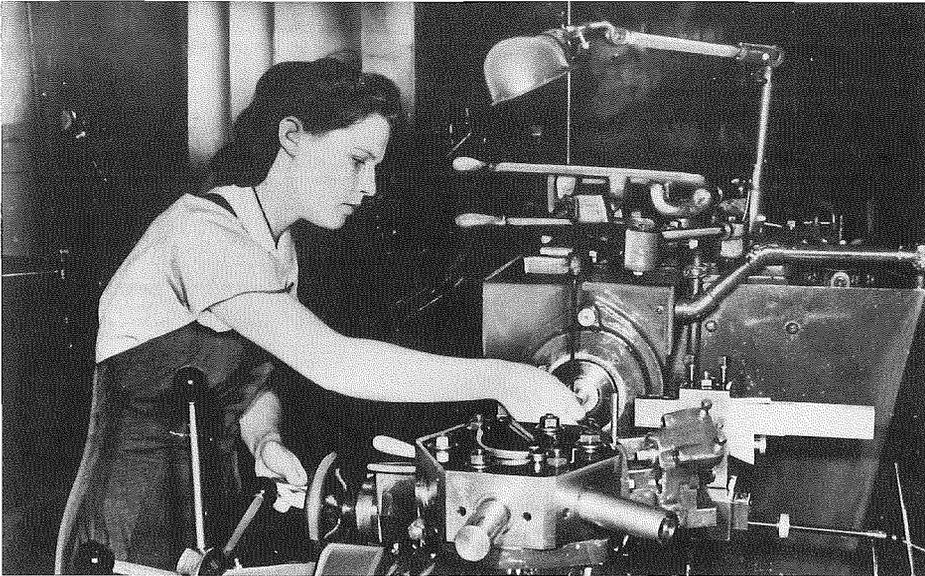
fire protection. Property values inflated rapidly. By September 1931 city housing lots which had sold for an average of \$15 in January, averaged \$825. Home builders sold frame cottages with three or four rooms for \$3,000 to \$4,500. Bellevue's city budget quickly mirrored the military boom on Fort Crook: \$130,000 for sewer expansion; \$360,000 for a new water system; \$37,000 for a new elementary school and an addition to the high school. Funds were requested from the federal government and quickly approved. However, Bellevue still lacked adequate police and fire service, recreational facilities, and streets.<sup>5</sup>

The proposed bomber plant caused a zoning dispute over which government entity had authority to control the development of the area surrounding the bomber plant. Omaha mayor Dan Butler insisted that Omaha had zoning authority, but Sarpy County, site of both Fort Crook and Bellevue, disagreed. Sarpy County officials thought it their particular responsibility to protect the arriving plant workers and their families "from infiltration of the gambler, the bootlegger, and women of shady occupation."<sup>6</sup> Eventually state legislation was necessary to resolve the impasse. On February 17, 1941, L.B. 495, introduced by state senators Ernest Adams and William Metzger, gave zoning rights to the Nebraska Legislature Zoning Commission. The final result of the controversy was the extension of state legis-

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Glenn L. Martin-Nebraska



*The Martin Star, February 1944, urged "patriotic women" to seek employment in war industries . . . (left) Mary Duncan, a former waitress, operated a turret lathe in the Martin Plant . . . (below) Dorothy Blomquist, former department store employee, operated a drill press. Both courtesy Omaha World-Herald.*



lative authority over what had previously been local zoning matters and the thwarting of Omaha's attempt to expand its zoning and annexing power.<sup>7</sup>

A zoning ordinance and subsequent building codes were successful in defining areas of future growth, establishing acceptable building standards, resolving the problem of trailer homes, and meeting Federal Housing Authority requirements. Bellevue's housing boom was also facilitated by tax auctions held throughout 1941, which enabled builders to acquire large tracts of Bellevue property at low prices, use it as collateral for construction loans, and begin large-scale building. Most homes were small and offered few amenities, but they could be acquired for as little as \$100 down and were thus within the reach of most Martin plant workers.<sup>8</sup> Nevertheless, Bellevue's experience demonstrated the fallacy of the "popular belief . . . that a city with a military base is prosperous."<sup>9</sup>

Misconceptions about the economic realities of a military base can lead to various problems, including political maneuvering to obtain a base or retain one. Population growth is often mistaken for economic growth. Complacency toward economic development can retard efforts to diversify the economic base.<sup>10</sup>

However, on March 3, 1941, most Bellevuites rejoiced when Glenn L. Martin shoveled the first dirt at Fort Crook, signaling the start of construction of the Martin-Nebraska bomber plant. The *Omaha World-Herald* noted it as "the beginning of the most important industry that has come to Omaha since meat packing." A nineteen-gun salute to Nebraska Governor Dwight Griswold and visiting dignitaries opened the ceremonies.<sup>11</sup> Martin, a pioneer American flier and aircraft manufacturer, had flown his first crude plane in 1909 and incorporated the Martin Company in Santa Ana, California, in 1911. It later became internationally known for its pioneering development of seaplanes.<sup>12</sup>

Planning continued as preliminary construction work on the bomber plant proceeded at Fort Crook. Railroads

prepared to run shuttle trains making six or eight stops, enabling workers in Omaha, South Omaha, and Bellevue to get to work. Street car service was available to and from Council Bluffs, and bus service several times daily from Plattsmouth.<sup>13</sup> More state patrolmen were assigned to the Fort Crook traffic detail to handle the increased number of vehicles (more than 1,600 cars per hour at peak times) which flowed to and from the plant site during construction.<sup>14</sup> The first divided lane highway in Nebraska was built in 1941 on highways 73 and 75 between South Omaha and Fort Crook. This project consisted of six miles of twin concrete lanes separated by a grass plot with stabilized shoulders. Traffic-actuated control signals were installed at the entrance to the bomber plant. The northeast entrance to the plant also was connected with the existing pavement on the old location of Highways 73 and 75 by 1.7 miles of twenty-two-foot concrete pavement. This additional paved route to the plant further relieved congestion on Highways 73 and 75.<sup>15</sup>

Peter Kiewit Sons Company of Omaha, Nebraska, and Paschen Contractors of Chicago (a Kiewit associate) did the major construction of the plant, with two other companies the grading and material acquisition. The contract called for nine major buildings, including an aircraft assembly building measuring 600 by 900 feet. Skilled construction workers were hired from Omaha trade unions with the cooperation of the Nebraska State Employment Service, which had met with local union representatives in January 1941 to discuss the details of such an arrangement. In all more than 2,500 workers participated.<sup>16</sup> There were some complaints from job applicants who found they had to join unions to work, but "the organizers evidently handled these problems diplomatically. Unions generally cut initiation fees sharply to avoid criticism."<sup>17</sup>

During initial construction of the plant a seventy-foot difference in

ground level was filled or cut down. The contour north and east of the Fort Crook parade ground changed as bulldozers and scrapers moved five million cubic yards of earth. In the process, the fifty-year-old Fort Crook hospital, three double brick housing units, the post golf course, the noncommissioned officers club, and the headquarters building were razed. Smaller wood frame buildings were moved to different locations on the post. The first concrete for the assembly building was poured on April 7, 1941, and structural steel work began on June 18. Construction crews worked three shifts to complete the bomber plant as quickly as possible. The total floor space of 1,200,000 square feet nearly equaled the area of five football fields. Soon after building construction had begun, on June 28, 1941, the Army Air Forces confirmed an order for 1,200 B-26C Marauder bombers. Construction crews completed ninety-five percent of the plant's shell by September. Finish work on the plant was immense: 250 miles of electric wiring; 47,000 cubic yards of concrete; 10,000,000 square feet of painted walls; five acres of glass; ten miles of fluorescent tubal lighting fixtures on the plant's lower level. Floors composed of wooden blocks dipped in creosote and oil were installed. Such floors helped prevent back problems among workers who were required to remain stationary for long periods. It also allowed easier shifting of machinery. By October 1941, work was ninety-eight percent completed.<sup>18</sup>

The bomber plant was scheduled to be operational by January 1, 1942. The majority of the work was completed prior to the Japanese attack on Pearl Harbor while the U.S. was at peace, although actively supporting the British against Germany and Italy.

Although plant construction was completed on schedule, U.S. industry was slow in providing equipment. By January 1, 1942, only fifty percent of the plant's required machine tools had been installed. The plant was isolated from its subcontractors up to 750 miles

away. A pool of Burlington Railroad freight cars was modified to deliver oversized aircraft parts such as wing sections.

Great stress was placed on the B-26's range, speed, and altitude. The first prototype flew on November 25, 1940. Air crew training difficulties quickly surfaced because of a lack of confidence in the aircraft, which was difficult to fly and land. After numerous accidents, modifications made it easier to fly and the plane proved itself in combat.<sup>19</sup>

The assembly of one B-26 required 25,000 manufactured parts, not counting engines and instruments. Approximately fifty percent of the work required to build the B-26 was done at the Omaha site; thirty-six percent of the B-29 work was done there.<sup>20</sup>

By June 8, 1942, the first B-26 was spliced together on the plant's production line. Thousands of plant workers collected outside as the first operational B-26 taxied to the end of the runway and took off. On April 26, 1943, President Roosevelt toured the Martin plant, accompanied by Governor Dwight Griswold, Glenn L. Martin, and G. T. Willey, company vice-president and general manager. The four rode in an open car for an hour, touring the plant to the excitement of its workers.

Grinning employees forgot for a time all about turning out scores of heavily armed B-26 marauders to press up to the running board of his car and yell ecstatically as the president rolled by waving a hand at them.<sup>21</sup>

Early in 1943 controversy arose due to slow subcontractor deliveries of air frame components, which affected production schedules. Colonel George E. Strong, internal security officer for the Army Air Forces' central procurement district, implied that production by the subcontractors had to be temporarily delayed until the Martin-Nebraska



*Bomber plant workers used special tools to build tail fins and other surfaces. Courtesy Omaha World-Herald.*

plant could increase its assembly rate. G. T. Willey denied that the bottleneck was the fault of Martin-Nebraska plant employees and charged that Martin-Nebraska was sent B-26 wings that were too large and an insufficient number of tail sections. Both of these difficulties were caused by design changes, which lessened as the B-26 became more standardized and as the Martin-Nebraska plant retooled to accommodate design changes.<sup>22</sup>

The plant completed its 1,200th B-26 on November 3, 1943, completing delivery on the company's first contract of 1,200 planes. Between September 1 and December 1, 1943, 349 "strip B-26s" were assembled. The armament and other combat equipment were removed so the aircraft could be used as trainers. By January 1944 B-26 production began slowing and was

terminated in April 1944 with the delivery of the 1,585th B-26. B-26 production was tapered off as retooling for the new B-29 was completed.<sup>23</sup>

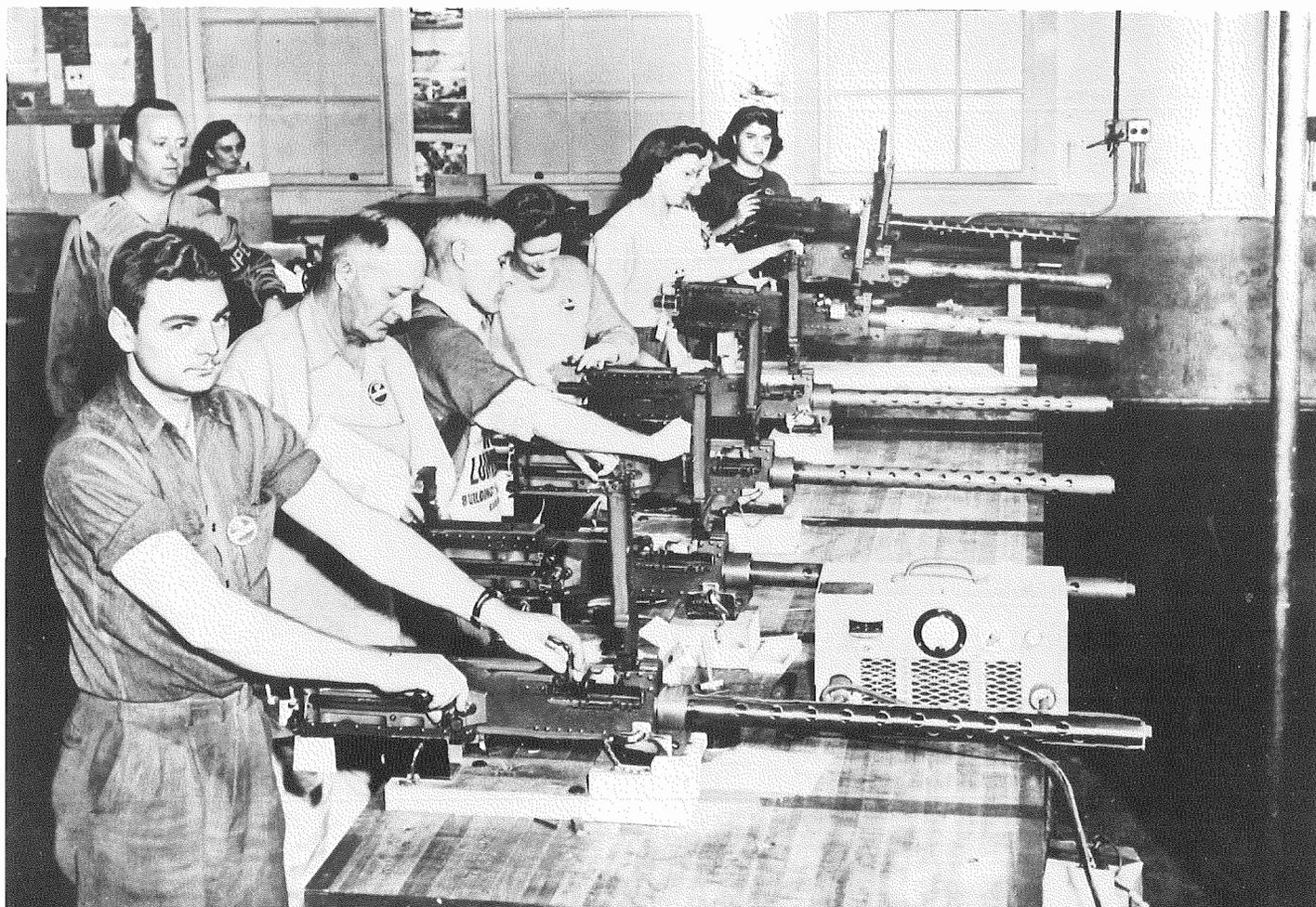
The Martin plant also had a modification center by October 1942, operated by Charles H. Day, formerly in charge of planning and layout at Wellston Air Depot in Georgia. The modification center was necessary to make changes required in the B-26 and other types of aircraft. During its operation, modifications were made on 1,593 B-26s, 893 B-24s, 12 P-40 Pursuits, and later 188 Wichita Boeing B-29 bombers, and 236 Martin-Nebraska B-29s.<sup>24</sup> After January 1, 1945, only Martin-Nebraska aircraft were modified at this facility.

Tragedy struck the plant on September 22, 1943, when a B-25 bomber flying overhead crashed into the roof of

the assembly building. Three crewmen on board were killed and a fourth was critically injured. The plane lodged in the girders after tearing a seventy-five-foot hole in the roof. As the plane burned, much of its ammunition exploded. One B-26 beneath the B-25 was destroyed and another was damaged. Fortunately, most bomber plant workers were eating lunch outside the building.<sup>25</sup> There were two other plane accidents involving Martin-Nebraska personnel, one of which resulted in the loss of two test pilots. The company did not have a single fatal industrial accident in more than 108 million man hours of labor.<sup>26</sup>

By July 1943 the nature of the war was changing and the Martin-Nebraska plant was selected to build a new bomber: a heavy, four-engine, long-range strategic bomber which was far superior to anything flying (the B-29 Boeing Superfortress).<sup>27</sup> The War Department described the B-29 as pow-

*Part of the Modification Center's armament group, which assembled, checked, and serviced machine guns on Martin Marauders. Courtesy Omaha World-Herald.*



## Glenn L. Martin-Nebraska

President Roosevelt, Nebraska Governor Dwight Griswold, and Glenn Martin toured the bomber plant on April 26, 1943. Courtesy Omaha World-Herald.

ered by "four Wright-cyclone 18 cylinder radial air-cooled 2,200 horsepower engines" and equipped with four-bladed Hamilton standard propellers. It included heavy armament, multiple guns, and power-operated turrets.<sup>28</sup> Only three other plants in the United States produced B-29s: those at Seattle, Wichita, and Marietta, Georgia.<sup>29</sup>

As B-26 production tapered off, the B-29 "Over Run Project" began. On August 6, 1943, five Superfortresses built by the Bell Aircraft Company were flown to Omaha to familiarize Martin-Nebraska mechanics with this particular type of plane. The training program was completed on February 2, 1944 – two months ahead of schedule while the plant was modified for B-29 production.<sup>30</sup>

On August 27, 1943, construction began on a 135,000-square-foot production facility expansion to cost \$2,000,000. But the shift from building B-26 medium bombers to B-29 Superfortresses was a complicated process. Every inch of the B-26 bomber production line floor was dismantled, salvageable equipment rearranged, and new equipment installed to accommodate the large B-29 airframe.<sup>31</sup> When the large frames for holding B-29 sections arrived from Boeing aircraft's Seattle, Washington, production facility, they filled most of the plant's floor space. Engineers wrestled these frames into place while maintaining perfect alignment. The B-29 production line weaved back and forth through the bomber plant's main assembly floor.<sup>32</sup>

Each Superfortress was identical, built in completed sections by various subcontractors, then assembled at a final production facility. Subcontractors included such well-known American firms as Cessna in Wichita, Kan-



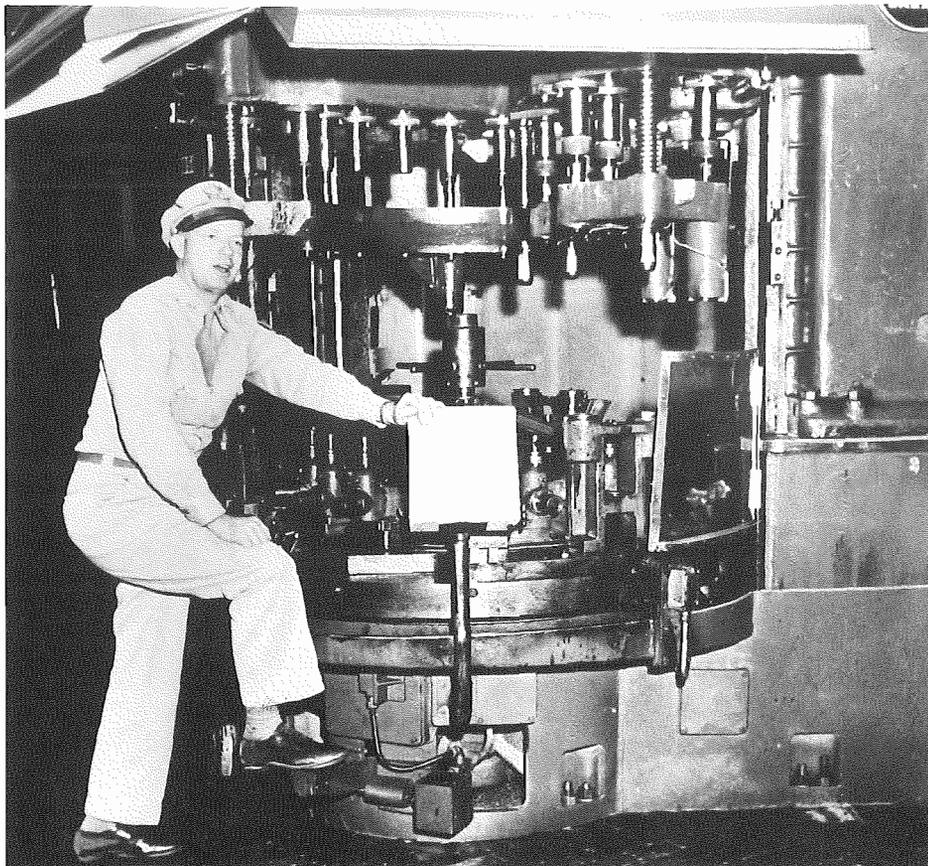
sas; Chrysler in Detroit, Michigan; Fisher Body in Cleveland, Ohio, as well as in Lansing and Grand Rapids, Michigan; Goodyear in Akron, Ohio; McDonnell in St. Louis, Missouri; and Republic in Farmingdale, New York.<sup>33</sup>

On April 6, 1944, B-29 production began at Martin-Nebraska. Especially designed rail cars delivered the various components to the final production assembly facility. The first Nebraska-built B-29, later named *Satan's Angel* by its crew, was completed on May 24, 1944. This plane was assigned to the 444th Bombardment Group in India, and was lost in a mid-air collision over the Bay of Bengal on March 25, 1945. Quality was the final consideration at the Martin-Nebraska plant and if a mistake was identified, it was immediately corrected. Once a bolt was dropped into a B-29 wing tank, where it could plug the fuel line if not removed. A woman worker entered the fuel tank vent to look for it. She squeezed through the small vent opening, then used a flashlight to locate the lost bolt and insert it into the proper mounting hole before being pulled out of the fuel

tank.<sup>34</sup>

Each B-29 was a complicated marvel of engineering built to exact specifications. Its large four-blade propellers were delicately balanced, and it was said that if a worker folded a match book over a horizontally positioned blade, the blade would slowly turn downward.<sup>35</sup> A select group of workers on the "crab crew" corrected any defects noted by inspectors and developed procedures so there would be no repeated mistakes.<sup>36</sup> Each Martin-Nebraska plant B-29 flew a three-hour checkout flight before going overseas.

By June 15, 1945, the Martin plant had produced 402 B-29s, averaging fifty-five per month at peak production. Because of the plant's high quality record it was selected to modify fifteen B-29s to equip the 509th Composite Group, later revealed as the special unit which dropped the atomic bombs on Japan. Colonel Paul Tibbets, Jr., the 509th commander, came to the bomber plant to select his own personal aircraft. In his book *Flight of the Enola Gay*, Colonel Tibbets said:



*Major John W. Mitchell with Martin plant equipment for boring holes in aircraft engine mounts. Courtesy Omaha World-Herald.*

I looked upon this airplane as one of the best B-29s ever produced. I remember picking it out of the production line at the Martin factory in Omaha with the help of a couple of foremen.<sup>37</sup>

By working seven days a week, Martin-Nebraska engineers completed the special design modifications in six weeks. Each design step required approval by the factory representatives at the Air Technical Service Command from Wright Field, Ohio. Colonel Tibbets brought a model of the atomic weapon to Omaha for demonstration-installation tests during aircraft modification.<sup>38</sup>

Throughout the war the plant needed large numbers of employees. Advertisements by radio, newspapers, the U.S. Employment Service, Office of War Information, and other government agencies were used to attract applicants. Many were recent high

school graduates searching for their first jobs, while others wanted to leave low-paying jobs. Relatively high pay was an attraction, but many workers after the Pearl Harbor bombing of December 7, 1941, entered war production because they believed it their patriotic duty.<sup>39</sup> And there seemed a kind of glamour and excitement even in menial bomber plant jobs. One former employee recalled:

It's just the idea that you were doing something and that you were right in the middle of things. Being right there, we heard all the war reports.<sup>40</sup>

Lincoln R. Scafe (later replaced by G. T. Willey) was hired to head the new company as second in command to Joseph T. Hartson, president. Department heads and key personnel such as flight engineers were dispatched from the Baltimore to the Omaha facility.<sup>41</sup> Seventy-five percent of the remaining

Martin bomber plant workers were from the Omaha-Council Bluffs area.<sup>42</sup> However, a sizeable number came from across the country.<sup>43</sup>

New employees, who had already passed a battery of preemployment tests, were impressed with the importance of their work by an introductory tour of the plant. A representative of the induction division of the industrial relations department was placed in charge of new workers and their first activities inside the plant: fingerprinting, photographing for an identification card, issuance of a badge, and a tour of the facilities. The permanent identification card also carried a written description of its owner. The badge included a series of numbers and a code of multicolored discs and rims indicating the worker's shift, access to locations within the plant, and other details.<sup>44</sup>

The plant itself has been compared to a small city. Several hundred telephones were installed at strategic locations. The system had two master switchboards, over 150 miles of wire, and twenty-two operators. Departments were maintained for finance, fire, police, schools, sanitation and safety, utilities, streets and grounds, and first aid. It also had a post office, hotel, library, and facilities for recreation, transportation, music and war bond sales.<sup>45</sup> The plant included cafeteria facilities which served 10,000 to 11,000 people daily and over twelve million meals per year. (There was a profit: one-fifth of one cent per serving.)<sup>46</sup> Cafeteria workers also served refreshments during workers' rest periods. Smoking was allowed in the cafeteria and other specified areas during the half-hour lunch break and the two daily rest periods.<sup>47</sup> Peak production at the plant was achieved when employees were working in three shifts,

twenty-two and one-half hours per day, six days per week.<sup>48</sup>

By January 1945 a total of 13,217 persons were at work – 11,019 in the main production area and 2,198 in the modification center. Included were 5,306 women, 765 blacks, 682 inspectors, and 127 supervisors and technicians.<sup>49</sup> Job classifications reflected an incredible range of employees, not only administrative, clerical, and factory personnel, but tailors (to alter guard uniforms), writers (to compile training manuals and brochures), photographers, cooks, chauffeurs, upholsterers, and many others. The average hourly pay rate in 1945 was .994 cents as compared to .69 cents in January 1942 – a 37.01 percent increase during a three-year period in which the cost of living increased 12.25 percent.<sup>50</sup> A March 1945 survey of straight-time hourly wages at the Martin plant and at thirty representative companies in the Omaha area, indicated that wages were consistently higher at Martin.<sup>51</sup> Bomber plant employees were also eligible to participate in a cooperative group insurance plan and a pension plan administered by Connecticut General Life Insurance Company.<sup>52</sup>

The Glenn L. Martin Nebraska Company contributed more than paychecks to the local economy. It provided industrial training for thousands of workers, many of whom had never before worked in a factory. Operations on the airplane assembly line were simplified by "process engineers who broke down complicated production problems into simple tasks capable of being performed by unskilled workers," reducing the opportunity for error to a minimum.<sup>53</sup> The company established absolute control over parts to ensure that they arrived where needed at the correct step in the assembly process. The Martin company was one of the first to adopt the statistical method of quality control of parts by using visual charts to indicate problem areas.<sup>54</sup> J. T. Hartson said:

We've taught our employees to make planes . . . We've trained them, they have been willing to

learn, and we have surrounded them with tools and procedure[s] so that they make few mistakes. And mistakes that do occur are caught by inspectors.<sup>55</sup>

In March of 1944 the *Martin Star* reported that the average training course lasted two weeks and was conducted entirely on company time free of charge to the employee.<sup>56</sup> The instruction stressed "shop or factory methods" and was taught at the Omaha plant by selected instructors.<sup>57</sup> Undoubtedly, the training program not only upgraded employees' skills but increased overall productivity at a time when it was estimated that "each employed person must do twenty-five percent more work on the average if both defense and civilian needs are to be fulfilled."<sup>58</sup>

Area high schools and the University of Omaha also offered classes in skills such as drafting and blueprinting, which benefited bomber plant employees. In January of 1941 Sidney Owens, acting state director of vocational education, requested that a representative be sent to Baltimore to confer on skilled worker needs with officials of the Martin Company. This trip (and another to a regional meeting of vocational education officials with federal officials January 16-18 at Chicago) were paid from federal defense education funds, which also defrayed the cost of expanding trade training courses.<sup>59</sup>

In November of 1944 more than forty percent of the plant's nearly 12,000 employees were women, which made it the state's largest recruiter of women war workers.<sup>60</sup> The local area was greatly affected socially, politically, and economically. For most of the twentieth century, until World War II, only twenty-five percent of American women were in the labor force, most in low paying jobs. The work of women during World War II proved that they could be trained to do the same industrial work as men. "The number working rose from 14,600,000 in 1941 to 19,370,000 in 1944"; about fifty percent of all American women worked

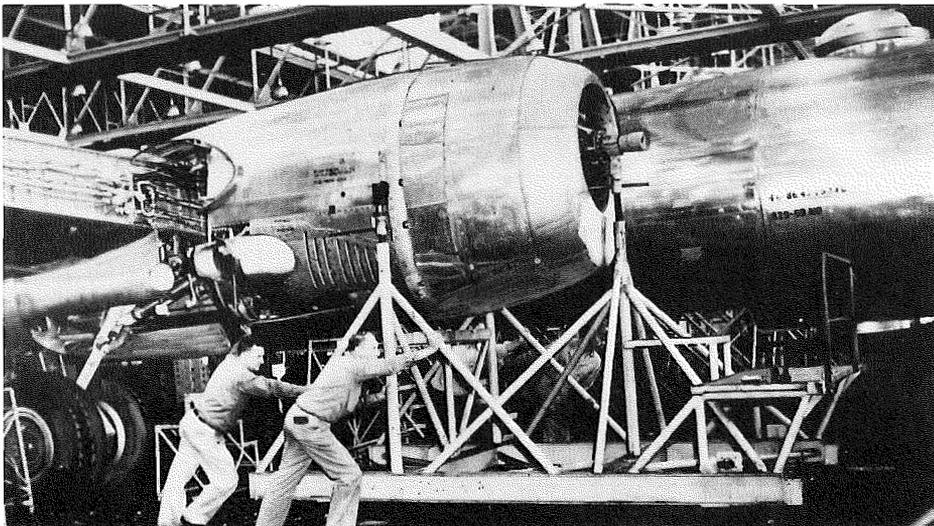
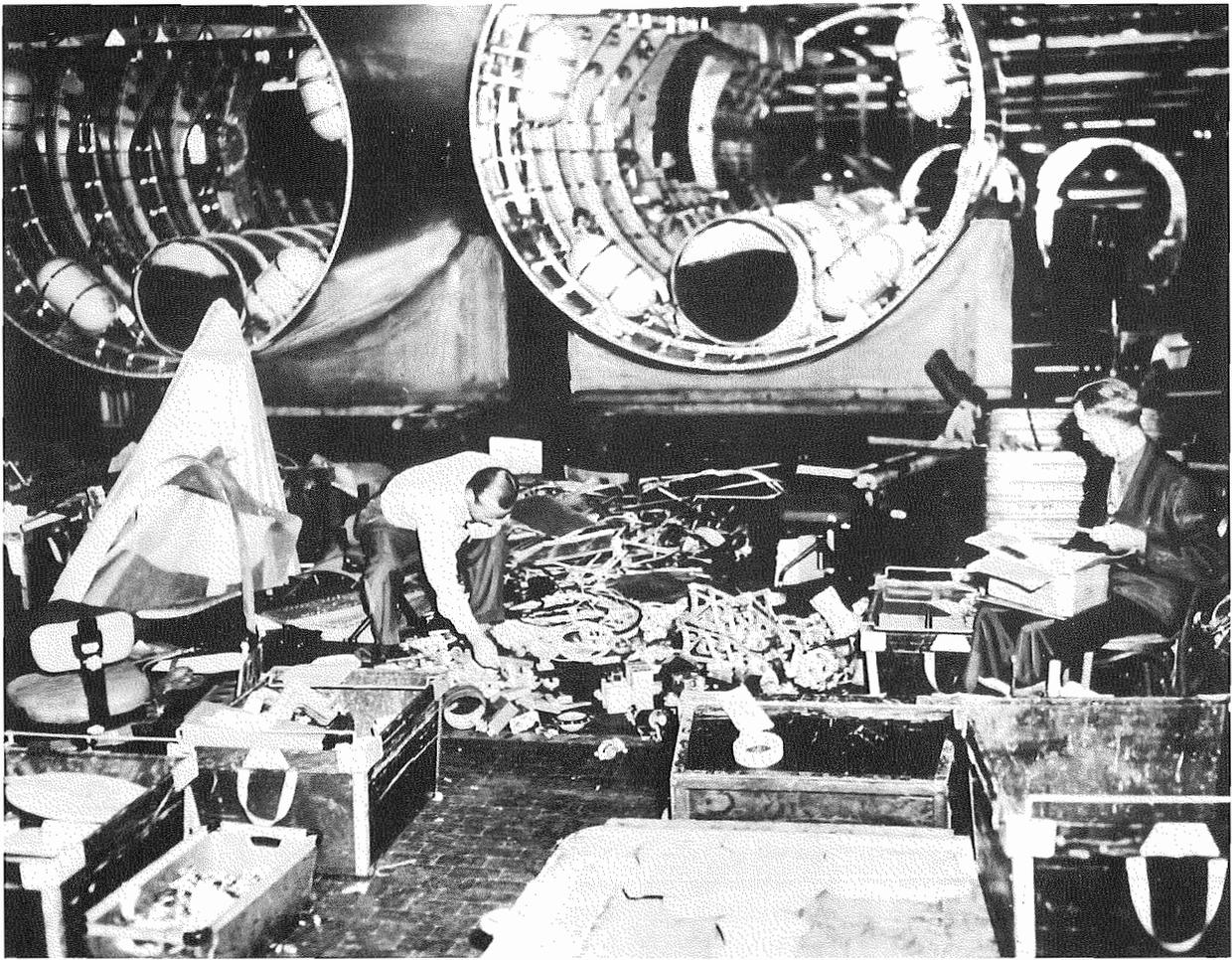
outside their homes during the war.<sup>61</sup> They were motivated not only by patriotism and the desire for high wages, but by the sense of community they gained from participation in a huge undertaking. Without their labors, the U.S. war economy would never have been able to produce the guns, ammunition, ships, aircraft, and other military hardware needed to win the war. And their presence in the workplace sparked the beginning of a change not only in the working roles of men and women but in the living styles and home duties of both sexes. Fowler B. Harper, deputy chairman of the war manpower commission, in February of 1943 suggested that school hours be extended through the afternoon and that night shopping opportunities be increased to aid working women.<sup>62</sup> About the same time Sara E. Southall, "womanpower" consultant of the war manpower commission, urged more attention to

"adequate feeding of employees," saying that with increased employment of women the meal at the factory "may come to be the only well-balanced meal that either men or women have in 24 hours."<sup>63</sup>

Many women did not at first possess the basic skills necessary for the jobs for which they applied. Less than ten percent of female applicants had any extensive experience with machinery.<sup>64</sup> But the Martin Company wanted to employ women on the same basis as men and maintained that on company payrolls "all Martineers are equal."<sup>65</sup> Its "training classes and upgrading groups" brought the women's skills to the required level.<sup>66</sup>

Since the ratio of women to men in the entire industry, now 1 to 8, must soon reach 4 to 8 in order to fill places left by men inducted into the armed forces, the largest training job of all is that of preparing women for shops and assembly lines.<sup>67</sup>

Classes in such advanced technical skills as aircraft electricity, aircraft instruments, and aircraft radio were available during all three shifts at the plant.<sup>68</sup> The growth of women workers



*Parts from B-29 fuselages were sorted for reshipment after the Martin plant closed . . . (left) Workmen removing engine nacelle from B-29. Both from the John S. Savage Collection owned by Western Heritage Museum, Omaha.*

in inspection was especially notable. On March 24, 1942, Joan Catalano was the first woman inspector to be hired by Martin-Nebraska. Women were later hired as inspectors in receiving, detail manufacturing, general assembly, finishing and plating, hangars and flight test, and modifications.<sup>69</sup>

However, there were ominous indications that these gains might be temporary. Eighty-three percent of the women hired by the plant were placed in jobs lowest on the classification tables.<sup>70</sup> They worked mainly as drill operators, rivet handlers, bench electricians, timekeepers, dock hands, clerks, maintenance staff, cafeteria workers, and "general helpers" (usually trainees in any department assigned "duties of a nature requiring no specific skill").<sup>71</sup> Average wages ranged from \$96 to \$172 monthly.<sup>72</sup> Women did have a higher rate of turnover than men, perhaps due to family obligations.<sup>73</sup>

The *Martin Star*, published monthly at the Martin-Baltimore plant, in May of 1944 praised women's "inborn quality for patience and their ability to make monotony an interesting thing" but stated that their intuition and originality could best be used at home.

When certain foods and clothing become shortages [scarce], they [ideal women plant workers] cheerfully give up what they might need for their men at the front . . . They spend their evenings and spare time mending and restyling clothes, repairing their home appliances, knitting sweaters for their kiddies, and stretching their food rationing points.<sup>74</sup>

Another bow to traditional femininity was a 1945 beauty contest to choose Miss Martin-Nebraska. Nineteen-year-old Virginia Johnson of Omaha was crowned the contest winner at an April 7 coronation ball held at Omaha's Paxton Hotel. Johnson, employed in the coordination department of the bomber plant, was elected by popular vote from among nine other women, who in turn were selected from sixty-two entries judged from photographs submitted to Earl Carroll, a Hollywood beauty contest judge. L. J. Jones, plant recreation director, arranged the

event.<sup>75</sup>

In 1941 national polls indicated that about ninety-five percent of all working women expected to stop after the war, but as the war dragged on, that percentage dropped sharply.<sup>76</sup> Women who had worked at lower paying jobs in retail sales or housekeeping before the war, were likely to want to remain in factories because of the higher wages. Clearly for many women work expectations would conflict with postwar reality.

When the war ended, so did the military careers of millions of U.S. servicemen. Women workers had previously given up time and consumer goods for their men at the front; they now gave up their jobs. Most were returned to their previous low-paying jobs or fired. The prevailing attitude was that women needed to return home, raise children, and keep house. But thereafter the possibility of paid employment outside domestic circles was always present and encouraged succeeding generations of women to enter the industrial work force.<sup>77</sup>

Few people were more directly involved with the personnel structure at the Glenn L. Martin-Nebraska plant than Don H. Filbert. Filbert at first worked in the Martin employment office and as final interviewer, hired over 10,000 applicants. At various times he also supervised industrial relations, selective service, personnel files, and other divisions of the personnel department.<sup>78</sup>

In his capacity as wage administrator, Filbert set up and administered a wage program for over 14,000 workers (14,572 at peak employment). This involved the evaluation of more than 600 different jobs arranged in a hierarchy of ten labor grades ("one" was the highest) with three subdivisions in each, and the supervision of from thirty to fifty subordinates. In addition, he prepared wage and classification exhibits for negotiation with the CIO; compiled statistics and advised management on labor turnover, suspensions, and absenteeism; set up classification require-

ments for each of the company's eighty-two major departments; and made wage surveys of both the area and the industry. Of the 10,211 persons employed by the company on V-J Day, he was retained until April of 1946, at which time less than fifty remained.<sup>79</sup>

Filbert's grasp of the complex problems involved in supervising and motivating such a large number of employees is revealed in his August 1945 memo to a co-worker. Noting that "merit" increases had been given somewhat haphazardly in the past, Filbert recommended "an orderly and consistent formula . . . be used in transfers, demotions, upgradings, and layoffs." He called the attention of upper management to inconsistent ratings so that the system could be corrected before possible unionization of the Martin-Nebraska plant.<sup>80</sup> Both the AFL and the CIO competed to win bargaining rights. Several craft unions (for heating and ventilating engineers and for carpenters and joiners) entered the plant as the result of a National Labor Relations Board election held in February 1944, which also resulted in 45.6 percent of production employees voting for representation by the CIO.<sup>81</sup> The CIO, formed in 1935, had entered Nebraska in 1937. Members were active in the Nebraska Ordnance Plant at Mead as well as in the Martin plant.<sup>82</sup> A 1945 suit by more than 200 Martin employees for \$400,000 in overtime compensation due them under the terms of the Fair Labor Standards Act, was a further indication that relatively high wages did not always guarantee worker satisfaction.<sup>83</sup>

During four years of operation, the plant regularly met its production quotas and won nine of the thirty merit awards given by the War Production Board to aircraft industries.<sup>84</sup> On December 13, 1943, the War Department announced that Martin-Nebraska would be awarded the Army-Navy "E" Production Award for operating twelve consecutive months of on-schedule production. The "E" stood for excellence.<sup>85</sup>

The dropping of the atomic bomb on



Crew of the B-29 City of Omaha, the 169th Superfortress to leave the bomber plant in February of 1944. It flew thirty-three missions against the Japanese before the war ended. In October 1945 a public reception was held in Omaha for the plane and its crew. Courtesy Omaha World-Herald.

Hiroshima by the Omaha-built *Enola Gay* (August 6, 1945) and the subsequent atomic bombing of Nagasaki (August 9, 1945) were the climax of the Manhattan Project to produce an atomic bomb.<sup>86</sup> It was also the climax of the Martin-Nebraska B-29 production facility. The August 1945 atomic bomb missions convinced Japan to accept the Allied unconditional surrender terms, with the provision they could keep their emperor. With the end of the war many military contracts were abruptly terminated and production lines closed. On September 18, 1945, the last of 531 Omaha-produced B-29s rolled out of the final assembly hall.<sup>87</sup>

On April 1, 1946, the Martin Company's last 100 workers left the plant. During the shutdown period after the end of the war, Omaha-Council Bluffs faced the postwar shock caused by cancellation of military contracts. Some workers remained temporarily employed as the B-29 production machinery and equipment were removed. The bomber plant was used for storage

of machine tools from 1946 to 1948 and later for processing machine tools for temporary storage.<sup>88</sup> Fort Crook was transferred to the U.S. Air Force and became Offutt Air Force Base in 1948. The Strategic Air Command Headquarters was moved to Offutt that same year, due partially to the influence of Nebraska Senator Kenneth Wherry.<sup>89</sup> The assembly building was remodeled in 1959 to serve as a guided missile assembly facility for SAC's nuclear defense mission. The structure later became the hub of Offutt support facilities and a wide range of sports/educational activities.<sup>90</sup> Reunions of bomber plant workers – the most recent in September 1991 celebrating the fiftieth anniversary of the Martin plant – keep alive the memory of their work producing B-26s and B-29s for America's World War II effort.

## NOTES

<sup>1</sup>History of the Glenn L. Martin-Nebraska Company," unpublished manuscript, Glenn L. Martin Company Papers, MSO366, State Ar-

chives, Nebraska State Historical Society, Lincoln, Nebraska (hereafter MSO366, NSHS).

<sup>2</sup>*Omaha World-Herald*, Dec. 25, 1940.

<sup>3</sup>"History of Building D," Offutt Air Force Base pamphlet 210-1 (Apr. 15, 1988), 4. Curtis E. LeMay and Bill Yenne, *Superfortress, the Story of the B-29 and American Air Power* (New York: McGraw-Hill Book Company 1988), xi.

<sup>4</sup>*Nebraska Blue Book 1944* (Lincoln, NE: Nebraska Legislative Council, 1944), 242-43.

<sup>5</sup>Jerold Simmons, "Public Leadership in a World War II Boom Town: Bellevue, Nebraska," *Nebraska History* (Winter 1984), 485-88, 491-92, 495.

<sup>6</sup>*Papillion Times*, Jan. 16, 1941.

<sup>7</sup>Jacqueline McGlade, "The Zoning of Fort Crook: Urban Expansionism vs. County Home Rule," *Nebraska History*, 64(Spring 1983):21-22, 30, 32.

<sup>8</sup>*Ibid.*, 488, 491. For information on lot sales in Bellevue prior to the housing boom, see chapter 25 of William J. Shallcross's *Romance of a Village, Story of Bellevue, Nebraska* (Omaha: Roncka Brothers, 1954).

<sup>9</sup>Mary M. Olson, *Effects of a Military Base upon the Economy of a Small City* (thesis, presented to American Industrial Development council, 1980), 283-308.

<sup>10</sup>*Ibid.*

<sup>11</sup>*Omaha World-Herald*, Mar. 2, 1941.

<sup>12</sup>*Ibid.*, Dec. 5, 1955, 8:5; Mar. 2, 1941. *Lincoln Star*, Dec. 5, 1955, 1:2; Dec. 6, 4:1-2. "Presented by D. H. Filbert at the 40th Anniversary Reunion of Glenn L. Martin-Nebraska Employees, August 22, 1981," MSO366, NSHS.

<sup>13</sup>V. Kastens, *A Survey of the Employment Situation in Omaha, Nebraska* (Lincoln: Ne-

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braska State Employment Service, Jan. 1941), 13. Requested by Advisory Commission to the Council of National Defense.

<sup>14</sup>*Twenty-fourth Biennial Report of the Department of Roads and Irrigation to the Governor of Nebraska, 1941-42*, Vol. 1 (Lincoln, 1941-42), 239-40.

<sup>15</sup>*Ibid.*, 137, 139.

<sup>16</sup>*The Unionist* (Omaha), Feb. 7, 1941. "Building D," 4. Kastens, *A Survey of the Employment Situation*, 11b.

<sup>17</sup>*Omaha World-Herald*, Oct. 26, 1941.

<sup>18</sup>"Building D," 4-5. "Introduction and Tour Preparation Talk," MSO366, NSHS.

<sup>19</sup>Enzo Engellucci, *The Rand McNally Encyclopedia of Military Aircraft: 1914 to the Present* (New York: Gallery Book, 1990), 289.

<sup>20</sup>Deb O'Donnell, "Homefront Heroines: Women of the Glenn L. Martin-Nebraska Plant," unpublished manuscript, MSO366, NSHS.

<sup>21</sup>*Lincoln Star*, Apr. 29, 1943, 7:4.

<sup>22</sup>"Magazine of the Midlands," *Omaha World-Herald*, Mar. 1, 1981, 16. "Building D," 7-8.

<sup>23</sup>"Building D," 8.

<sup>24</sup>"Presented by D. H. Filbert." Information on Day and his qualifications appeared in *The Martin Star*, Dec. 1942, 15.

<sup>25</sup>*Council Bluffs Nonpareil*, Sept. 19, 1982, 3A:1-8. "Magazine of the Midlands," *Omaha World-Herald*, Mar. 1, 1981.

<sup>26</sup>*Omaha World-Herald*, Nov. 11, 1945, C14.

<sup>27</sup>"Building D," 8.

<sup>28</sup>*Columbus Daily Telegram*, Apr. 7, 1944, 2:4.

<sup>29</sup>*Ibid.*, Nov. 20, 1944.

<sup>30</sup>"Presented by D. H. Filbert."

<sup>31</sup>"Building D," 9.

<sup>32</sup>Author's interview with Warren Gilfillan of Council Bluffs, Iowa, Sept. 14, 1990.

<sup>33</sup>LeMay and Yenne, *Superfortress*, 47.

<sup>34</sup>Author's interview with Mary Rocka of Council Bluffs, Iowa, Sept. 14, 1990.

<sup>35</sup>Gilfillan interview.

<sup>36</sup>Author's interview with Ethric Brown of Red Oak, Iowa, Sept. 14, 1990.

<sup>37</sup>Paul W. Tibbets, *Flight of the Enola Gay* (Reynoldsburg, Ohio: Buckeye Aviation Book Company, 1989), 197.

<sup>38</sup>Vincent C. Jones, *U.S. Army in World War II. Special Studies, Manhattan: The Army and the Atomic Bomb* (Washington, D.C.: U.S. Government Printing Office, 1985), 522-23.

<sup>39</sup>"Bomber Plant Remembered," *Lincoln Star*, Oct. 8, 1982.

<sup>40</sup>*Council Bluffs Nonpareil*, Sept. 19, 1982, 3-A:1-8.

<sup>41</sup>"Presented by D. H. Filbert."

<sup>42</sup>*Ibid. Lincoln Star*, Oct. 8, 1982, 14:1-3.

<sup>43</sup>For information and brief interviews of Martin employees living in the Plattsmouth area, see "Many States Native to the June Newcomers," *Plattsmouth Semi-Weekly Journal*, June 22, 1942, 4:3.

<sup>44</sup>"Introduction and Tour Preparation Talk."

<sup>45</sup>*Omaha World-Herald*, Nov. 11, 1945, C14.

<sup>46</sup>*Ibid. Council Bluffs Nonpareil*, Sept. 19, 1982, 3A:1-8.

<sup>47</sup>"Cafeteria Worker" job specification, MSO366, NSHS. "Introduction and Tour Preparation Talk," MSO366, NSHS.

<sup>48</sup>"Building D," 8.

<sup>49</sup>The Glenn L. Martin-Nebraska Company Employment Summary, Entire Facility as of January 5, 1945," MSO366, NSHS.

<sup>50</sup>*Ibid. The Martin Star* (Baltimore, Maryland), Nov. 1942, 8.

<sup>51</sup>"Union Negotiation Exhibits," MSO366, NSHS. However, wages at the Martin plant were somewhat lower than at many other war industries around the country such as those in Wichita, Chicago, and Des Moines.

<sup>52</sup>Cooperative Group Insurance Plan," xerox of brochure, MSO366, NSHS. "Employees Pension Plan," xerox of brochure, MSO366, NSHS.

<sup>53</sup>*Work Simplification Training Manual* (Omaha: Industrial Engineering Department of Glenn L. Martin-Nebraska Co., n.d.), MSO366, NSHS. Quote from *Omaha World-Herald* (morning), Apr. 3, 1945.

<sup>54</sup>*Omaha World-Herald*, Sept. 30, 1945, C14.

<sup>55</sup>*Columbus Daily Telegram*, Nov. 20, 1944.

<sup>56</sup>*Martin Star*, Mar. 1944, 12.

<sup>57</sup>Employment records for the Glenn L. Martin-Nebraska Company, MSO366, NSHS.

<sup>58</sup>*Falls City Journal*, Apr. 28, 1941, 1:5. The quote is attributed to James S. Kemper, president of the United States Chamber of Commerce.

<sup>59</sup>*Omaha World-Herald*, Jan. 9, 1941.

<sup>60</sup>*Columbus Daily Telegram*, Nov. 20, 1944, 8:3.

<sup>61</sup>Allen M. Winkler, *Homefront U.S.A.: America During World War II* (Illinois: Harlan Davidson, Inc., 1986), 50.

<sup>62</sup>*Omaha World-Herald*, Feb. 19, 1943, 1:4.

<sup>63</sup>*Ibid.*, 3:3, 1:4.

<sup>64</sup>*Martin Star*, Jan. 1943, 15.

<sup>65</sup>*Martin Marauder*, Aug. 20, 1943, 15.

<sup>66</sup>*Martin Star*, Nov. 1942, 8.

<sup>67</sup>*Ibid.*

<sup>68</sup>*Martin Marauder*, Sept. 1, 1944, 3.

<sup>69</sup>*Ibid.*

<sup>70</sup>"Employee Distribution by Labor Grade, Monthly Breakdown," period ending Feb. 20, 1945. Employment records for the Glenn L. Martin-Nebraska Company, MSO366, NSHS.

<sup>71</sup>"Basic Job Classifications," period ending Feb. 14, 1945. Employment records for the Glenn L. Martin-Nebraska Company, MSO366, NSHS.

<sup>72</sup>"Employee Distribution."

<sup>73</sup>Information compiled from Monthly Labor Turnover Reports, MSO366, NSHS. In January of 1944 the percent of male turnover at the Martin-Omaha plant was 3.00; percent of female turnover was 4.85. By January 1945 the percent of male turnover was 4.26 and female turnover was 7.57 percent.

<sup>74</sup>*Martin Star*, May 1944, 4-5.

<sup>75</sup>*Sunday World-Herald*, Apr. 1, 1945, 5C; Apr. 8, 1945, 13A:2-3.

<sup>76</sup>Joan E. Trey, "Women in the War Economy," reprint from *The Review of Radical Political Economics* Vol. 4 (July 1972): 47.

<sup>77</sup>Carol Richards, "Rosie the Riveter Went Home, and Raised Daughters to Work," *Iowa City Press Citizen*, Dec. 9, 1988, 7A.

<sup>78</sup>"Personal and Occupational History of D. H. Filbert," MSO366, NSHS.

<sup>79</sup>*Ibid.* "Magazine of the Midlands," *Omaha World-Herald*, Mar. 1, 1981. MSO366, NSHS.

<sup>80</sup>"Inter-Department Communication," D. H. Filbert to J. D. Mace, Aug. 7, 1945, MSO366, NSHS.

<sup>81</sup>*The Unionist*, Feb. 11, 1944. Omaha Packing house workers helped the CIO's United Automobile Workers (UAW) to win the right to represent most Martin plant employees, but the war ended before actual bargaining could begin. William C. Pratt, "Union Maids' in Omaha Labor History, 1887-1945," *Perspectives: Women in Nebraska History* (Lincoln: Nebraska Department of Education and Nebraska State Council for the Social Studies, 1984), 206.

<sup>82</sup>Patricia Lou Parsons, *Organized Labor in Nebraska During World War II* (M.A. thesis, University of Nebraska, 1950), 6, 13, 15.

<sup>83</sup>*The Unionist*, Mar. 2, 1945. Employees claimed compensation for time spent "to change into required uniforms, check in firearms, report for roll call and drill practice and pistol practice."

<sup>84</sup>*Omaha World-Herald*, Aug. 14, 1943.

<sup>85</sup>*Martin Star*, Aug. 1943, 13. "Building D," 8.

<sup>86</sup>David A. Anderson, *B-29, Superfortress at War* (New York: Charles Scribner's Sons, 1978), 147.

<sup>87</sup>"Building D," 10.

<sup>88</sup>*Sunday World-Herald*, June 19, 1955, 1A:7.

<sup>89</sup>Shallcross, *Romance*, 224.

<sup>90</sup>"Building D," 11.