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# PLOUGHSHARES INTO AIRPLANES



*World War II led to a dramatic growth of manufacturing industry in Kansas, the greatest surge occurring in aircraft production. In this photo taken at Boeing in Wichita, note the presence of several women at work on the B-29 Superfortress bombers.*

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# Manufacturing Industry and Workers in Kansas During World War II

*by Peter Fearon*

**A**lmost all Americans think of Kansas as the “wheat state,” and there is no doubt that produce from Kansas farms played a crucial role in ensuring victory for the United States and its allies during both world wars. In World War II, Kansas farmers, many driving tractors and combines, responded vigorously to the call for more wheat, cattle, corn, and hogs. Generations of expertise ensured a successful drive to meet the demands of the war effort. The exigencies of World War II also placed great strains on the nonfarm sector, and the little understood response to this challenge forms the basis of this article.

War brought about a sharp change in employment patterns in the state, especially in Wichita and Kansas City, with the most profound impact being felt by women and African Americans. Both groups previously had been confined largely to the farm, the service sector, or enforced leisure. The expansion of highly paid industrial jobs not only helped erase the memory of the Great Depression but aided in transforming the social dynamics of the workplace. As managers and workers reacted to the ever increasing demands for extra output, they revised their notions of who could accomplish particular tasks and with whom they would work. The better balanced work force of 1945 was not the result of imaginative planning but of a need to adapt to new circumstances. Indeed, the failure to appreciate the potential of female and black labor at an early stage in the war was a costly mistake.

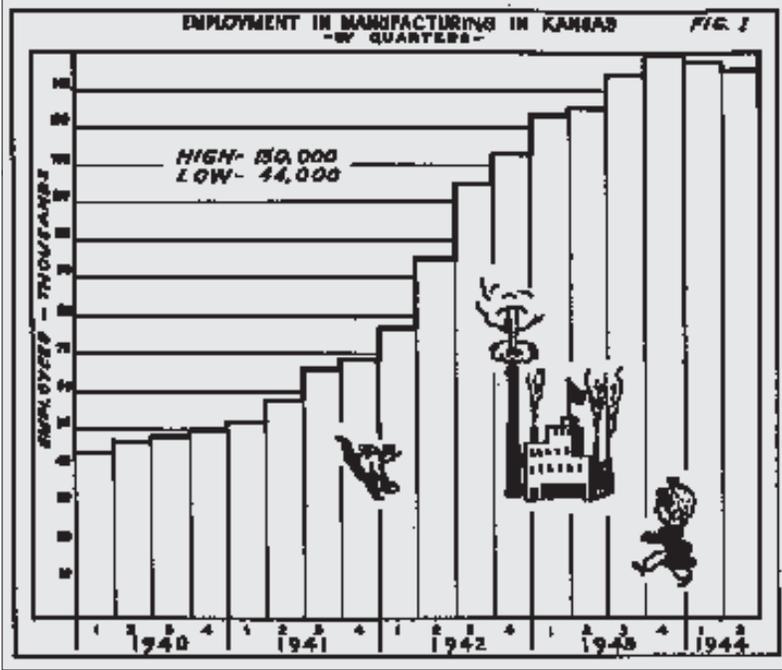
According to the U.S. Census taken in 1940, 446,944 males and 116,882 females were employed in Kansas.<sup>1</sup> Of these, 179,502 men and 3,861 women were working on farms, making that category of employment the state’s largest; but 25,533, virtually all males, were construction workers, and 44,766 men and 8,305 women found employment in manufacturing. A closer examination of the manufacturing sector reveals that the most numerous employment groups were meat packing (6,882 men; 1,492 women), other food industries (6,599 men; 975 women), printing and publishing (5,931 men; 1,721 women), and petroleum refining (5,010 men; 222 women). With the exception of petroleum refining, these are not the industries of war. Manufacturing enterprises customarily associated with mass production of guns, tanks, army vehicles, and planes were absent from the Kansas scene in 1940. The one industry that could play a positive role, aircraft manu-

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1. U.S. Department of the Interior, *Sixteenth Census: The Labor Force: Kansas, 1940*, vol. 3 (Washington, D.C.: Government Printing Office, 1943). Tables 1, 4, and 17 are the sources of all figures quoted. All those working on WPA or other emergency work are excluded from the employment totals.



This graph appeared in a 1945 University of Kansas publication *Kansas Manufacturing in the War Economy 1940-1944*.

facturing and parts, employed, according to the census, a mere 1,531 men and 51 women. Could a state with such a small manufacturing base and with so few workers with the necessary skills for pursuit of the industrial war effort play a leading role in building the “arsenal of democracy?”<sup>2</sup>

In fact Kansas played a highly significant role in the struggle to free both Europe and Asia. World War II led to a dramatic growth of manufacturing industry in the state. The numbers on industrial payrolls rose from 137,811 in the

2. Extensive literature is available on the impact of World War II in the United States. Among the most useful publications are John Morton Blum, *V was for Victory: Politics and American Culture During World War II* (New York: Harcourt Brace Jovanovich, 1976); Merle Fainsod, Lincoln Gordon, and Joseph C. Palamountain Jr., *Government and the American Economy*, 3d ed. (New York: W. W. Norton, 1955); Peter Fearon, *War, Prosperity and Depression: The U.S. Economy, 1917-1945* (Lawrence: University Press of Kansas, 1987); Richard R. Lingeman, *Don't You Know There's a War On? The American Home Front, 1941-1945* (New York: G.P. Putnam's Sons, 1970); Geoffrey Perret, *Days of Sadness, Years of Triumph: The American People, 1939-1945* (Madison: University of Wisconsin Press, 1985). Richard Polenberg's three volumes cover much ground: *America at War: The Home Front 1941-1945* (Englewood Cliffs, N.J.: Prentice Hall, 1968); *War and Society: The United States, 1941-1945* (Philadelphia: Lippincott, 1972); *One Nation Divisible: Class, Race, and Ethnicity in the United States Since 1938* (New York: Viking Press, 1980). Finally, Harold G. Vatter, *The U.S. Economy in World War II* (New York: Columbia University Press, 1985), provides a comprehensive economic analysis of the war.

For material especially on Kansas, see *Kansas History: A Journal of the Central Plains* 17 (Spring 1994), which is specifically devoted to World War II and is a valuable bibliographical guide for national and local issues. In that issue Patrick G. O'Brien, “Kansas at War: The Home Front, 1941-1945,” 6-25, and Judith R. Johnson, “Uncle Sam Wanted Them Too! Women Aircraft Workers in Wichita During World War II,” 38-48, are particularly valuable in the context of this article. Finally, Frank Joseph Rowe and Craig Miner, *Born on the South Wind: A Century of Kansas Aviation* (Wichita, Kans.: Wichita Eagle Publishing Co., 1994), and Craig Miner, “The War Years in Wichita” in *Kansas Revisited: Historical Images and Perspectives*, ed. Paul K. Stuewe (Lawrence: University of Kansas Division of Continuing Education, 1990), add greatly to our understanding of life in Kansas during this dramatic period.

first quarter of 1940 to a wartime peak of 284,264 in the third quarter of 1943. By late 1944 the industrial work force had declined to 251,555, but this figure, it should be noted, was far above the prewar level. The census uses the classification “industrial,” which covers a wide range of occupations.<sup>3</sup> However, virtually all the employment growth in this sector during the war occurred in manufacturing, where four aircraft plants and two ordnance plants accounted for more than 80 percent of the additional jobs created. The industrial transformation of Kansas during World War II was not balanced but was confined to a select group of industries and the areas where they were located. A detailed census by the Bureau of Business Research at the University of Kansas revealed that 169 new manufacturing enterprises were established between January 1940 and

August 1, 1944, 70 percent of which were war production oriented. The rise in employment generated by this expansion was far greater than the increase in the number of industrial plants. During this time the manufacturing industry gained 102,000 additional workers. The wage increases enjoyed by all who worked in this sector were substantial as high hourly rates were inflated by shift work and regular overtime. During the first quarter of 1940, the average manufacturing wage was \$109 per month; by the second quarter of 1944 the monthly wage had reached \$225.<sup>4</sup>

By the end of the war, employment in the production of military aircraft alone was twice as great as the numbers engaged in all manufacturing in Kansas when the effort began to convert to a war economy. The aircraft industry was concentrated in Wichita, which explains why nearly 70 percent of all new war plants were located in the city. Indeed, Wichita's three main aircraft plants accounted for a massive 62 percent of the total increase in wartime manufacturing employment. These plants needed the services of subcontractors, the expansion of which created eleven thousand additional jobs in Wichita alone. Kansas City, Kansas, with North American Aviation Inc. located in the Fairfax industrial district, also played a signifi-

3. This classification includes jobs in the service, financial, insurance, real estate, wholesale and retail trades, transportation and communications, mining, construction and manufacturing sectors.

4. L. L. Waters, *Kansas Manufacturing in the War Economy 1940-1944*, Industrial Research Series No. 4 (Lawrence: University of Kansas Publications, 1945), 11-19. This publication and its predecessor provide valuable information on the growth of manufacturing in Kansas during the war. It can be supplemented by various issues of the *Kansas Labor and Industrial Bulletin*, which has data on both industry and employment.

**Table 1**  
**KANSAS WAR SUPPLY CONTRACTS, JUNE 1940–JUNE 1945**

	<u>Aircraft</u>	<u>Ships</u>	<u>Ordnance</u>	<u>Communications Equipment</u>	<u>Other</u>	<u>Total</u>
Kansas	\$2,524,460	\$44,073	\$208,930	\$44,578	\$102,032	\$ 2,924,073
Douglas Co.	—	—	68,036	—	3,755	71,791
Sedgwick Co.	1,660,655	—	3,233	—	19,656	1,683,544
Wyandotte Co.	862,895	29,789	36,788	44,509	32,744	1,006,780

Source: Summary of War Supplies and Facilities by state and county, Policy Documentation file, War Production Board, RG179, National Archives, Washington, D.C.

icant role in the war effort, while the opening of Kansas Ordnance Works close to Parsons and Sunflower Ordnance near Lawrence had a major impact on local economies. Virtually no one was employed in manufacturing ordnance in 1941; by early 1945 the two plants employed more than eighteen thousand workers.<sup>5</sup> How was this expansion accomplished? How was labor recruited for the newly created jobs, and what steps were taken to ensure that production could continue when young men were being drafted for the armed forces? Was employment of workers in these war plants a simple matter of key industries paying such high wages that they had the pick of the labor supply, or was there an attempt to regulate the market? Most important, what were the costs and the benefits of this dramatic change to the economy of Kansas and to its people?

A cursory analysis of Kansas war contracts (Table 1) reveals the dominance of Sedgwick (Wichita) and Wyandotte (Kansas City) Counties in the wartime boom. Together they accounted for 92 percent of the state total. Douglas County, the next most important recipient of contract funding, lagged a long way behind the two leaders. Note too the astonishing impact of aircraft manufacture to Kansas during the war period. In just a few years Wichita was transformed, becoming a classic boom town. The industrial base of Wyandotte County had been greater than that of Sedgwick County before the wartime expansion began. By Pearl Harbor, Sedgwick County and Wichita had forged ahead. As early as September 1941 Wichita was described as standing beside San Diego as one of the “hottest” defense boom cities in America. In the twelve

months ending in August 1941, manufacturing employment in the city rose by 168 percent, at that time the highest increase in the country.<sup>6</sup> Any analysis of the impact of war on both business and people must, therefore, include a close examination of the response to new demands in what was then Kansas’s second most populous city.

In January 1940 the Wichita aircraft industry comprised the following firms: Stearman Division of Boeing Airplane Company (500 employees), Beech Aircraft Corporation (778 employees), Cessna Aircraft Company (125 employees), and the fledgling Culver Aircraft Corporation, which had been established in 1939.<sup>7</sup> These were very modest numbers. Apart from the aircraft producers, Wichita housed only two other significant manufacturing plants. The most important of these were the Coleman Lamp and Stove Company with 706 employees (which during the war provided the airplane industry with many seasoned managers) and the Cardwell Manufacturing Company, an oil field equipment producer with 270 workers. Other industrial plants around Wichita were small businesses that, for the most part, were dedicated to producing and maintaining agricultural equipment and suitable only for subcontracting work.

The lack of a sizeable manufacturing base posed problems for the aviation industry as it responded to the sudden flood of orders for a variety of aircraft types. Aircraft plants had a high ratio of workers to building space, and they were quite unlike the bulk of Kansas manufacturing industry, which was strongly influenced by primary activ-

5. *Ibid.*, 18. Both Kansas Ordnance Works and Sunflower Ordnance were owned by the U.S. War Department but were operated by private corporations. On V-J Day the Kansas Ordnance Works had approximately five thousand workers; Sunflower Ordnance had nine thousand.

6. Labor Market Survey Reports, Migration to Wichita, RG 183, National Archives, Washington, D.C.

7. Boeing had acquired the Stearman Aircraft Company in 1934. On April 8, 1939, the Stearman plant was made a division of Boeing, and the facilities for the production of the Kaydet trainer were expanded. See Peter M. Bowers, *Boeing Aircraft Since 1916* (London: Putnam, 1966), 102, 213.

Table 2

	1939	1940	1941	1942	1943	1944	1945	1946
Mines and mineral products	27.53	28.64	32.51	36.83	42.57	48.55	50.29	50.43
Airplane manufacturing	N.A.	25.01	27.89	39.83	38.00	55.47	55.68	48.35
Service industries	12.94	13.57	14.10	16.77	18.85	20.95	23.68	25.17
Retail trade	16.65	16.53	17.67	17.84	20.97	24.20	25.63	30.59

Source: Kansas State Labor Department, *Biennial Report, 1946–1948* (Topeka: State Printer, 1948), 33–34.

ities or processing. Before the war Kansas industries, of which food processing and petroleum refining are good examples, had been dominated by the location of raw materials. The emerging importance of fabrication was to be a new experience for the state and one that posed many challenges.<sup>8</sup> Few industrial workers were available, and skilled workers, especially, were in short supply. No manufacturing facilities with adequate space for expansion existed. Most challenging of all, if migrants were to flock to the city, as surely they must, a housing shortage would be inevitable.<sup>9</sup> Even when the federal government resolved the problem of financing the expansion, factory space and the provision of a properly trained labor force were both formidable obstacles that needed to be tackled urgently.

As early as May 1940 the labor market for aircraft manufacturing showed signs of becoming tight.<sup>10</sup> The four Wichita airplane plants had increased employment to about eight thousand workers by April 1941, but demand was still rising steeply in an industry where employers demanded workers of particularly high quality and also could afford to pay for them. Airplane producers were anxious to recruit physically fit U.S. citizens over the age of eighteen, preferably living within easy commuting distance from their plants. Although no rigid upper age limit was imposed, Boeing and the other companies preferred younger white males to undertake unskilled or semiskilled work. Those workers who had experience in auto plants or in railroad workshops, for example, were prized. The progression of weekly wages in

8. L. L. Waters, *Postwar Employment in Kansas*, Industrial Research Series No. 5 (Lawrence: University of Kansas Publications, 1945), 25.

9. Jack G. Clark, "History of the Wichita District," *Histories of the Smaller War Plants Corporation 1945*, box 5, Records of the SWPC, RG 240, National Archives.

10. John E. Brink to Howard Hunter, July 12, 1940, Central Files, Kansas 640, 1939–1943, RG 69, National Archives, hereafter cited as Central Files, Kansas.

several Kansas industries presents an interesting comparison (Table 2). The relatively high rates in mines and mineral products and in airplane manufacture are striking, and it is easy to see how workers in the service or retail sectors could be induced to change jobs for better pay. The key to attracting skilled men was the level of wages, but for the typical unskilled Kansas farm boys, training was emphasized. The companies faced the difficult challenge of having to create a new industrial organization to cope with the rapid increase in orders while at the same time integrating large numbers of new employees, 95 percent of whom had no experience in aircraft work. Many production workers were hired after successfully completing an intensive training course that lasted from six to eight weeks. Beech Aircraft introduced training in technical skills and organized leadership classes for supervisors and crew chiefs as well as the rank and file.<sup>11</sup> To assist with hiring, firms used labor scouts, radio and newspaper advertising, and the employment service to expand their overwhelmingly male work force. However, while aircraft workers at the beginning of the war were highly skilled, the greater use of mass production and assembly line techniques made possible by a subdivision of labor gradually lessened the level of skill and hence the intensity of training that was required. Employers made maximum use of the available labor by simplifying tasks whenever possible.<sup>12</sup>

One obvious reservoir of labor was the pool of unemployed in Sedgwick and adjoining counties, large numbers of whom still languished without jobs after a decade of depression. The 1940 census recorded that during the week beginning March 10, 1940, some 2,174 male and 834 female

11. John P. Gaty to U.S. Senate Special Committee Investigating the National Defense Program, August 8, 1941, National Defense Committee, OP-30 Aviation, box 685, Beech Aircraft file, RG 46, National Archives.

12. Labor Market Survey Reports, Wichita, October 29, 1940, RG 183; Waters, *Postwar Employment in Kansas*, 22.

Wichita residents were without jobs and actively seeking work. In addition, 443 persons without any work experience were available for employment and 1,677 others were engaged on public emergency work that included the Work Progress Administration (WPA), National Youth Administration (NYA), and Civilian Conservation Corps (CCC) projects. Unfortunately, not many of these jobless residents had the skills or the aptitude to make them suitable for employment in Wichita's burgeoning aircraft plants. Of the males who were actively seeking work, for example, nearly 30 percent had been unemployed for more than a year and were not considered attractive recruits. Even the availability of WPA workers, who did at least have current work experience, failed to present a lifeline to aviation employers drowning under a tidal surge of orders as a mere 15 percent of the total were skilled and most of those individuals had experience only in the construction industry.<sup>13</sup>

A report on Kansas by the Federal Works Agency (FWA)/WPA in January 1941 highlighted the difficulties facing WPA officials, who were frustrated by the failure of the expanding defense sector to absorb more of the state's unemployed. Boeing was identified as the key to defense employment in Kansas, but when the company recruited machinists, welders, woodworkers, and sheet metal workers few WPA workers made their way onto the payroll. The situation at Boeing was replicated in the other aircraft plants. Fortunately, construction work at Fort Riley had provided jobs for some WPA employees, but the current contract was due for completion in March 1941. The report noted that the depressed coal mining district of southeast Kansas, which carried one-third of the total WPA load for the entire state, would be little affected by defense work. It also pointed out that in December 1940 ninety-one hundred men and women who had been declared eligible for WPA work could not obtain it because of a shortage of funds. In that same month Kansas had twenty-five thousand general relief cases, and more than sixty-four thousand Kansans were registered with the state employment service because they were seeking work. Therefore, in early 1941 the Kansas labor market experienced a considerable amount of slack, and the compilers of this report were con-



*Opening new industries in Kansas, such as the Kansas Ordnance Works near Parsons, had major impacts on local economies. Here employees of Kansas Ordnance Works are photographed while loading shells.*

fidant that defense activities during 1941 would not greatly reduce the need for WPA activity in the state.<sup>14</sup>

In the early days of the defense build-up, the industry did not worry about failure to systematically utilize the unemployed, since the policy of hiring unskilled labor at the factory gate provided firms with a more than adequate supply. Recruiting those with essential skills relevant to aircraft production was, however, a more taxing proposition. What were the possibilities of training some of Wichita's unemployed to fill these jobs? One would have thought quite good, since 80 percent of the aviation industry's semiskilled needs were provided by the Wichita National Defense Training School. Sadly, the relief rolls proved of little help. Of the sixteen hundred persons enrolled in training courses in April 1941, only 166 had come from WPA rolls, of whom 80 percent had been recruited from outside Sedgwick County. The problem for relief workers was that recruiters had imposed impossibly high standards. They not only desired a minimum educational attainment of completed seventh grade but also gave priority to youth. The great majority of those hired were fit unmarried men in their twenties. By contrast, fewer than 30 percent of WPA workers were under the age of forty, and most were family heads who could not easily migrate for defense work. In addition, the WPA gave work to those with physical defects who were unacceptable to the defense industry.<sup>15</sup> As a result, the aircraft companies did not

13. Clarence G. Nevins to Ernest C. Marbury, December 27, 1940, Central Files, Kansas; U.S. Department of the Interior, *Sixteenth Census*, Table 25, 123.

14. Industrial Activity and the Need for WPA Employment (Kansas), Report by FWA/WPA Division of Research, February 3, 1941, Central Files, Kansas.

15. Clarence G. Nevins to Malcolm J. Miller, August 7, 1942, *ibid.*



These promotional drawings appeared in issues of *Kansas Labor and Industrial Bulletin*, January 1941 (left) and May 1941.

absorb WPA workers in great numbers and looked instead to youthful migrants to satisfy their labor needs. WPA employment in Wichita did decline, partly because the general creation of new job opportunities continued but also because of a shortage of funds for projects from sponsors whose attention had been diverted to more urgent war related activity.<sup>16</sup>

By fiscal 1942 more than one-third of the national WPA program was devoted to defense and war activities. Although the emphasis had shifted, construction still was the dominant activity. Highways for the armed forces and construction work at military bases, which included hospitals, mess halls, and barracks, provided many jobs.<sup>17</sup> In addition, the WPA, under sponsorship of the War Production Board, became closely involved in training workers for the war effort.

In the spring of 1942 a buoyant Clarence G. Nevins, the state administrator for the FWA/WPA, wrote that Kansas had been more fortunate than many other states in securing war contracts. He listed the U.S. cavalry post at Fort Riley, the U.S. military post at Fort Leavenworth, the Johns-Manville shell loading plant at Parsons, the Ammonia-Nitrate plant operated by Jayhawk Ordnance at Baxter Springs, North American Aviation's bomber assembly

plant in Kansas City, a naval air base at Gardner, and the expanding Wichita aircraft plants. In addition, the U.S. Army was about to construct a bomber base in Topeka. Because this industrial expansion coincided with favorable farm conditions, Nevins proposed closing down WPA programs in central and western

Kansas to avoid the accusation that his organization was hoarding labor needed by farmers.<sup>18</sup>

It was unrealistic to assume that all of Kansas's unemployed could have been absorbed by the rapidly expanding defense sector. Part of the problem was the attitude of employers, but another reason was the obvious deficiencies in the WPA work force, which steadily declined in quality as those most capable secured private sector jobs. Nor was the attitude of state officials always as positive as it should have been. A federal official visited Topeka in April 1942 with the message that opportunities for female power machine operators were expanding and women on WPA sewing projects could be trained for these more highly paid posts. Local re-employment representative Cornelia Edge was dismissive, claiming that many of the "WPA women on sewing projects are too old, some too fat, some physically unfit and the negroes are not acceptable."<sup>19</sup> This harsh judgment reflected the reality of the situation. In early 1942 aircraft companies sought to employ young white women who not only were high school graduates but who also were under five foot two inches tall and weighed less than 135 pounds. Employers wanted intelligent highly motivated agile workers who would be able to gain access to every nook and cranny in an airframe.<sup>20</sup>

16. Labor Market Survey Reports, Wichita, May 9, 1941; *ibid.*, May 11, 1941.

17. *Report on Progress of the WPA Program, June 30, 1942* (Washington, D.C.: Federal Works Agency, 1942), 1, 6-12.

18. Clarence G. Nevins to Howard Hunter, February 7, 1942, Central Files, Kansas.

19. Cornelia Edge to John J. McDonough, Report on visit to Topeka, April 10-11, 1942, *ibid.*

20. Johnson, "Uncle Sam Wanted Them Too!" 40. Twelve months later these stringent physical requirements had been relaxed.

Since neither the city nor surrounding counties could provide all the labor needed, outsiders found great incentive to migrate to Wichita, although reliance on migrants was not without its costs. In 1941 a flood of young workers, far in excess of the jobs available, descended upon Wichita. Some erected temporary shacks outside the city limits and others, stranded and without means of support, applied for relief. Stories of their discomfort did not act as a significant deterrent. Between April 1, 1940, and November 1, 1943, the net civilian migration from other parts of Kansas to Sedgwick County had reached 57,880. The next highest, Johnson County, registered a gain of only 8,157 persons, providing a clear indication of the war's impact on Wichita and of the leading role it played in Kansas.<sup>21</sup> During September 1941 a detailed investigation was carried out into the migration that was rapidly transforming Kansas's second largest city. Since October 1, 1940, 12,800 families had moved into the city, increasing the population by approximately 20 percent. The state of Kansas supplied 54 percent of the newcomers, neighboring Oklahoma 18 percent, and Missouri 9 percent. In general the migrants had not traveled a great distance, their average journey being only 135 miles. Just over half the migrants were from rural places or settlements, and a further 38 percent previously had lived in towns of between twenty-five hundred and twenty-five thousand inhabitants. The migrants were overwhelmingly white, their average age was 24.9 years, and women made up 13 percent of all workers in migrant families. More than half of the migrants were single persons. Only 10 percent of these newcomers had employment experience in the manufacturing industry, while nearly 70 percent were from farms, had previously worked in trade or the service sector, or had been students.

The aircraft industry absorbed 52 percent of the influx, but investigators found in the fall of 1941 that a surprising 13 percent of migrants were unemployed and seeking work during the week prior to being interviewed. Unemployment was most prevalent among the young, those who had held no jobs in their previous places of residence, farm workers, domestic service workers, women, and students. Those who had some experience in the manufacturing sector or in construction fared relatively well in the job market, and, in general, as the size of their place of origin rose so the extent of unemployment decreased. In other words, a positive correlation existed between employment oppor-

21. Labor Market Survey Reports, Kansas General, Estimated net inter-county urban migration, April 1, 1940–November 1, 1943, RG 183.

tunity and recent urban experience. What these figures show, however, is that being available for work was no guarantee of employment in Wichita at this time and that the uncoordinated inflow of people was too great for the city to absorb.<sup>22</sup>

Clearly, the greater the reliance on local labor the less strain would be exerted on Wichita's housing sector, educational resources, and utilities.<sup>23</sup> This would prove especially important as the new plants being constructed for the aircraft companies began operation and the demand for labor increased. Early in 1941 a federal program approved the construction of a four-hundred-dwelling-unit defense village on the southeast edge of Wichita. Completed during August and September, Hill Top Manor was a new community mostly for aircraft factory workers. Although welcomed by families who moved there, this project made only a small impact on a growing housing problem.<sup>24</sup>

A growing emphasis on the recruitment of workers who lived within commuting distance of the aircraft plants necessitated significant changes. The most important was close cooperation between business and government officials, which included a new willingness to coordinate efforts so employers were fully aware of local resources and potential operatives knew the employers' requirements. In the middle of 1941 the Kansas State Employment Service assigned special staff to Boeing, Beech, and other companies.<sup>25</sup> These representatives kept in daily contact with plant officials and received up-to-date information about the numbers of workers required and their training needs.

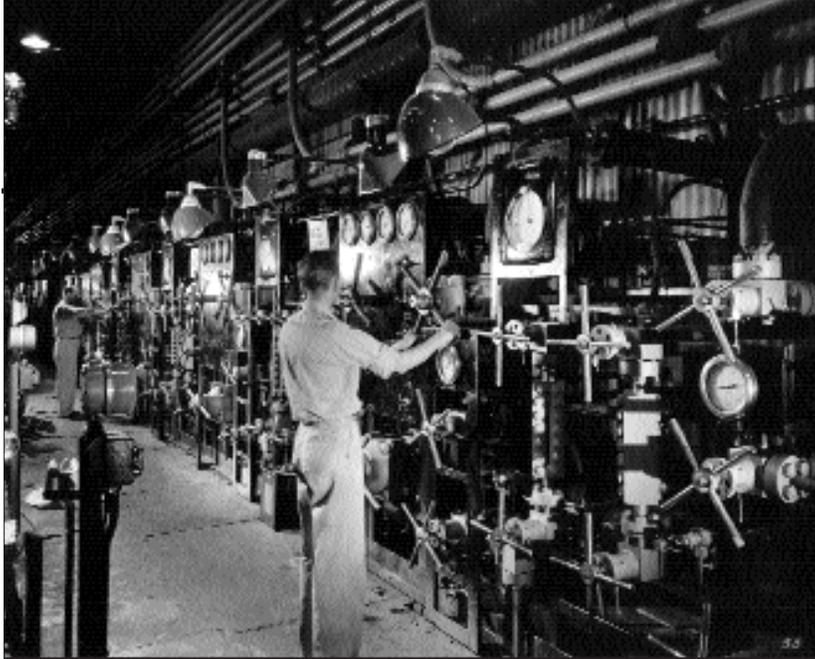
The compilers of federal labor market survey reports were quick to seize on the problem and to suggest solutions. Among these were a greater emphasis on training to upgrade the skills of those already working, encouragement of voluntary transfers of key workers between plants, and the retention of those who were trained. The latter initiative reflected anxiety caused by migration of prized workers who had moved to California. Federal representa-

22. Labor Market Survey Reports, Migration to Wichita, 1–9.

23. On March 5, 1943, L. W. Mayberry, superintendent of Wichita Public Schools, wrote to Arthur Capper begging for financial relief as the schools under his charge had nearly three thousand additional pupils. See Federal Works Administration—Wichita, box 8, Capper Papers, Library and Archives Division, Kansas State Historical Society, hereafter cited as Capper Papers.

24. *Wichita Eagle*, February 5, 1941; *Kansas City Times*, September 16, 1941.

25. The United States Employment Service was a nationwide system operated by the states under federal grants-in-aid. In December 1941 the state services were brought under direct federal control. See *The United States at War. Development and Administration of the War Program by the Federal Government* (Washington, D.C.: Bureau of the Budget, 1946), 176–82.



In 1942 Kansas had been more fortunate than many other states in securing war contracts, among them the Jayhawk Ordnance at Baxter Springs. Here employees of Jayhawk Ordnance work at control panels to ensure the production of five hundred tons of ammonia per day.

tives noted that very few women were employed in the plants, even though large numbers of females were available and could be used to supplement the male work force or to replace men who could then move to more essential employment. Black labor in Wichita and in the surrounding area was even more marginalized than female labor in the early stages of the war. The African American employee, apart from those employed as janitors and in similar unskilled activities, was a rarity. A serious stumbling block to the maximization of local labor participation was the rigidity of employers' specifications, and it was not until late 1942 that significant changes were apparent. By that time training requirements had been relaxed as had age limits and some restrictions; at the Boeing plant, for example, both husband and wife could be employed. However, high physical standards, which the aircraft companies believed essential for their workers, were maintained.<sup>26</sup>

Even if all available local labor were fully utilized, recruitment from outside the area, especially of skilled workers, was inevitable. That necessitated a more planned system of hiring to minimize resultant regional dislocations, for example, in labor from northeast Kansas being targeted toward the aircraft subcontractors and arms plants in Kansas City rather than the more distant Wichita. Consideration also had to be given to farmers' needs, especially during wheat harvest. Careful planning to increase recruitment of student or other casual labor to work on the land released farmhands for permanent work in war plants.<sup>27</sup>

26. Labor Market Survey Reports, Wichita, December 1, 1942, 6.  
27. *Ibid.*, June 1941, 5–10.

One of the most interesting and in the long run economically influential effects of the pressure on labor was the impact exerted on industrial training throughout the state. Wichita made an early start in vocational training owing to an extraordinary initiative by James C. Woodin, L. W. Brooks, and L. W. Mayberry who were, respectively, commissioner of industrial education, principal of East High School, and the superintendent of schools. In late 1938 a sheet metal department was established at East High School primarily for pre-vocational training, but soon evening courses were available for men who sought employment in the aircraft industry. As early as April 1939 the public school system responded to the aircraft industry's need, opening its vocational training facilities every evening and

on Saturdays.<sup>28</sup> By the fall of 1940 refresher courses in sheet metal work, welding, woodworking, and drafting had been organized in Wichita and Kansas City under the joint supervision of the U.S. Office of Education and the Kansas Board for Vocational Education. About half of the applicants for places in these courses came from WPA rolls while those not on relief were selected by the Kansas State Employment Service.<sup>29</sup>

By February 1941 the Wichita National Defense Training School had conducted refresher classes for nine hundred trainees who had the requisite skills or academic qualifications. Several of these courses were available on a twenty-four-hour schedule. Five pre-employment courses in welding and aircraft sheet metal work had commenced in Coffeyville with applications being taken through the local office of the Kansas State Employment Service. During the following month the state employment service began a campaign to register every unemployed worker who could be used or trained for a defense job and every worker who had defense related skills but who was not using them in his current job.<sup>30</sup>

The growth of training programs was extraordinarily rapid. In May 1941 nearly one thousand Kansans were enrolled in national defense training courses; by January 1942

28. Shelby Collum Davis, "Wichita—Boom Town," *Current History & Forum* 52 (January 10, 1941): 9–11, 30.

29. "Defense Program Increases Work of State Employment Service," *Kansas Labor and Industrial Bulletin* 10 (August 1940): 5.

30. "Kansas State Apprenticeship Council Created to Assist With the Training of Apprentices in Kansas," *ibid.* (March 1941): 3–6; "Expanding National Defense Program Continues to Add to Activities of Kansas State Employment Service," *ibid.* (February 1941): 4.

nearly four thousand were taking part in government and private training schemes.<sup>31</sup> Supplementary training also was carried out on a large scale. For example, the University of Kansas's extension division offered courses in engineering, shop mathematics, and shop management. Reports noted that during the following month ten thousand people were being trained every day in Kansas for jobs in war industries. Some thirty-five hundred were enrolled in training programs organized by the state's vocational education department, twenty-two hundred others were engaged in pre-employment classes, thirteen hundred were enjoying supplementary training, nearly one thousand young people were enrolled in courses organized by the NYA, and more than twenty-eight hundred released by their employers were attending courses at the University of Kansas and Kansas State Agricultural College. In addition, the state vocational education department held classes for 1,250 boys in rural schools to provide workshop skills, and fourteen hundred people were being privately trained, mostly in the aviation area.<sup>32</sup> Nevertheless, not all aircraft work required highly skilled individuals, and the introduction of new capital equipment together with a further division of labor significantly cut the level of training required for workers on assembly line operations, which included industrial relations, production control, material inspection, and transport.<sup>33</sup> It is clear, however, that within a few years the employment qualifications of thousands of Kansans had been dramatically improved. By 1945 sixty thousand workers had received the benefit of training and work in aircraft plants. This not only helped resolve problems facing war industries, especially aircraft manufacturing, but also laid the foundation for Kansas's industrial future in the postwar world.

In February 1942, however, an investigation into vocational training for women in Kansas City and Wichita

31. "Placements by Kansas State Employment Service Surge Upward as Claims for Unemployed Compensation Benefits Decline," *ibid.* (May 1941): 5; "Job Insurance Benefit Claims Increase as Kansans Feel Impact of War-Effort Program," *ibid.* 11 (January 1942): 3.

32. "Employment Conditions in Kansas Show Effects of Government Curtailment Programs and Seasonal Trends," *ibid.* (February 1942): 3-4.

33. Waters, *Postwar Employment in Kansas*, 22-24.

34. Chester W. Gregory, *Women in Defense Work During World War II: An Analysis of the Labor Problem and Women's Rights* (New York: Exposition Press, 1974), 69.

35. Clarence G. Nevins to W. McDonagh, Division of Training and Re-employment submits this report on FWA/WPA in Kansas on training and placement of women, February 12, 1942, Central Files, Kansas.



*The increase in the numbers of employees in Wichita called for additional housing. In 1941 a four-hundred-dwelling-unit defense village, Hill Top Manor, was constructed on the southeast edge of Wichita. This photo, taken on V-J Day, depicts Boeing Plants I and II in the foreground and wartime housing, including Hill Top Manor, in the background.*

found little cause for enthusiasm. In Kansas City training was available for radio assemblers but only for women between the ages of eighteen and twenty-six who had a minimum of two years' high school education. Electrical and radio assembly, which required concentration and dexterity, gave some women an early opportunity in the aircraft industry.<sup>34</sup> But in January 1942 when North American Aviation Inc. proposed a training program for females, the company was overruled by the Regional Labor Supply Committee, which wanted displaced male automotive workers to be given first preference. In Wichita, after an announcement that training was available for up to two hundred females in wood and sheet metal work, women flocked indiscriminately from restaurants, stores, and domestic work only to be faced with age, marital, family responsibility, and educational restrictions. This report stressed that if more women were trained, the opportunities should be available to those who were not only married but who also had responsibilities for dependents. Furthermore, because of serious housing problems in Wichita, preference had to be given to local women.<sup>35</sup> The WPA was closely involved in defense training for women but found



*The National Defense Training School in Wichita provided pre-employment courses for hundreds of trainees wanting to join the work force.*

the participation of relief workers disappointing. In Kansas City, North American Aviation did not want to employ anyone who, in its view, had languished on WPA payrolls for several years. In Wichita, however, federal officials believed that the failure to put more WPA workers into training programs often was the fault of local WPA officials. It is not surprising that the race barrier was even more effective than the gender barrier. Although a strong demand existed for in-plant training for female power machine operators, white women clearly were preferred even by the most hard-pressed employers. In fall 1942, for example, Clarence Nevins reported that during the previous two weeks he had provided businesses in the neighboring state of Missouri with fourteen African American women from Kansas as regrettably "there is no demand for colored inplant trainees in the state [of Kansas]."<sup>36</sup>

**T**he acceptance of black workers by Kansas employers was slow and difficult. In late 1940 a shortage of carpenters at Fort Riley forced employers to hire workers who lived a considerable distance away. The Colored Builders Association naturally sought union cards for their members so that they too could be employed but found that union officials at Fort Riley refused to accept them. Senator Arthur Capper took up this case, and the military authorities responded by trying to explain that although blacks were accepted as members of labor organizations, contractors refused to employ them at both Fort Riley and Camp Funston. The placement and supervision

36. Clarence G. Nevins to W. McDonagh, *Activities of Training and Pre-employment in Kansas*, October 20, 1942, *ibid.*; Fred J. Wilt to Bruce Uthus, *Defense Training Program, Kansas*, February 21, 1941, *ibid.*

of all civilian labor, it was alleged, was the responsibility of the contractor, not the military.<sup>37</sup> Further information provided to Capper revealed that Long Construction Company of Kansas City, Missouri, refused to hire African American carpenters on the grounds that white workers would strike. Capper's pressure eventually paid off. On January 13, 1941, he was informed that black workers were now employed at Fort Riley and that in future all labor from the Kansas Employment Service would be used, regardless of race and subject to elimination only after trial at the job. The Negro National Defense Committee quickly confirmed the employment of twenty-five carpenters and noted that others were being added daily.<sup>38</sup> This case is a vivid illustration of the difficulties faced by black workers even during a period of labor scarcity. In April 1941 no African Americans could be found among the sixteen hundred recruits who were taking courses at the Wichita National Defense Training School to provide semiskilled workers for the aircraft industry. Beech Aircraft had no pre-employment training for black workers, and because the company recruited workers exclusively through the state employment service vocational schools, racial minorities were not able to find positions even as janitors or porters.<sup>39</sup>

Arthur Capper was aware of the exclusion of black youths in the defense training program at Wichita, but his

37. C. A. Franklin to Arthur Capper, December 20, 1940, *Negroes*, box 41, Capper Papers; Capper to E. B. Gregory, December 31, 1940, *ibid.*; Capper to Gregory, January 9, 1941, *ibid.*; Gregory to Capper (n.d.), *ibid.*

38. C. A. Franklin to Arthur Capper, January 9, 1941, *ibid.*; A. Thomas to Capper, January 10, 1941, *ibid.*; E. B. Gregory to Capper, January 13, 1941, *ibid.*; Negro National Defense Committee, Kansas City, Missouri, to Capper, January 20, 1941, *ibid.*

39. Labor Market Survey Reports, Wichita, *Industrial Activity and the need for WPA employment April–May 9, 1941*; *ibid.*, memo to S. Hillman re production difficulties, June 3, 1941, *Problem Areas: Wichita, Kans.*

complaint, directed to the commissioner at the U.S. Office of Education, was ignored. Nevertheless, Capper's determination in pressing this Wichita issue was applauded by black Kansans. The senator also advanced the case for a federal grant to establish a training school for young African American females, but his request was refused on the grounds that unemployed males should be absorbed before the needs of women workers could be recognized.<sup>40</sup>

Some progress was reported in June 1941 when refresher classes in welding and machine shop practice in Kansas City that did not exclude nonwhites were introduced. Nevertheless, federal labor market surveys were conscious that employment in the manufacturing industry, especially in aviation, was restricted to white males, and they were keen to encourage employment of racial minorities and women.<sup>41</sup> In spite of the escalating demand for labor, in the fall of 1941 blacks still were not employed on production lines in Wichita's aircraft plants nor did employers expect this situation to change in the foreseeable future. Labor recruiters were convinced that the supply of nonwhites who had the qualifications necessary to gain admission to training programs was negligible. They justified this view by pointing to an intensive drive in Sedgwick County that had found only sixteen nonwhites who could be referred to the defense training school. However, R. B. Brown, president of the Kansas City Branch of the National Association for the Advancement of Colored People, informed Capper in early 1942 that African Americans who had successfully completed defense training school courses were still not being employed in his city.<sup>42</sup> More than a year later, when industrial labor was in greatest demand, it was claimed that Cessna Aircraft woodwork plants would hire blacks only as janitors. Moreover, an African American employee was informed that Cessna could not hire a black foreman to supervise janitors because the company had a maximum wage for black employees and foreman rates exceeded it. Capper's correspondent also cited Wallace Brothers, Inc., and the Monarch Food Company as companies where black Kansans were especially disadvantaged. Brown ended with the bitter observation that in some of the plants where

blacks were refused employment, people who could hardly speak English were working.<sup>43</sup>

The view of the airplane industry was that the exclusion of black workers from the production line had not adversely affected output, and the availability of black workers would not materially improve the supply of labor in the future. It is likely that firms used the excuse of high recruiting standards to exclude certain categories of workers from their payrolls. For example, union representatives in the Tri-State District, which had a recent history of bitter labor disputes, claimed that employers blacklisted men on the basis of union activity but used as a subterfuge the failure to meet minimum educational and physical standards.<sup>44</sup> Such accusations were, of course, extremely difficult to substantiate.

War pressures, however, eventually led to a change of attitude. By 1943 black workers had begun to move into positions that previously had been closed to them. One inevitable result was white resistance. In May 1943 white workers at the Brand and Puritz Garment Company in Kansas City staged a walkout in protest at black women's promotions to positions of power machine operators. Objections also were voiced to hiring black women at the Loose-Wiles Biscuit Company in Kansas City, but the company reported that in spite of these difficulties it was determined to integrate its work force. Black males at the Lathrop Trade School claimed racial discrimination, but a report by North American Aviation protested, disingenuously, that a newly decorated basement provided for nonwhite workers was the "best room" in the building. In Wichita, Boeing Aircraft experienced a sit-down strike called by some black employees who were deeply dissatisfied with the pace at which they were being upgraded.<sup>45</sup> In a significant move, officials of North American Aviation agreed to place black welders in their plant, to fill vacant places with black trainees as a matter of urgency, and even to appoint a "Negro Personnel Counselor" at the factory. The Aircraft Accessories Corporation of Kansas City agreed to hire additional black female

40. J. W. Studebaker to Arthur Capper, May 22, 1941, Capper Papers; Mrs. W. G. Proctor to Capper, June 19, 1941, *ibid.*; Studebaker to Capper, July 25, 1941, *ibid.*

41. *Kansas Labor and Industrial Bulletin* 10 (June 1941): 5; Labor Market Survey Reports, Summary of Labor Market in Wichita and the Surrounding Areas, June 1941.

42. R. B. Brown to Arthur Capper, January 22, 1942, Capper Papers.

43. George E. Van Hoote to Arthur Capper, October 13, 1943, *ibid.*

44. Labor Market Survey Reports, A Survey of the Labor Market, October 4, 1941, Problem Areas: Wichita, Kans.; War Manpower Commission, Records of Management-Labor Policy Committee, Summary of Minutes, Region 9, box 17, RG 211.

45. War Manpower Commission, Regional Director's Report, Region 9, Weekly Activities Report for week ending May 15, 1943, 5, 11; *ibid.*, Weekly Activities Report for week ending May 22, 1943, 3.

production workers. By 1943, too, Sunflower Ordnance, which was operated by the Hercules Powder Company at DeSoto, was contemplating the use of black production workers but not racially integrated production work.<sup>46</sup>

Such was the shortage of labor that companies were driven to hire those that managers, and their white male work force, would have rejected out of hand only a year previously. In early 1944 Phillips Petroleum of Kansas City had completed arrangements for integrating its work force, a move that had been long delayed because of white workers' objections. There were signs too that black workers were becoming more forceful in their approach to employment opportunities. African American pressure groups in Kansas City appealed for assistance when they sought to press Southwestern Bell Telephone to integrate its female labor force. However, in December 1944 the War Manpower Commission (WMC) reported that in the region including Kansas, few major employers utilized black labor in any professional or technical capacity. The picture in Kansas was similar to that for the whole nation.<sup>47</sup>

Nevertheless, during the war years progress was made on which African Americans could build an effective Civil Rights movement. As early as 1941 Kansas governor Payne Ratner supported full participation of black Kansans in defense programs. This move has been described by historian Patrick G. O'Brien as "the first small breach in the [state's] racial system."<sup>48</sup> Powerful influences for change were not merely the result of labor market pressures. Black voices demanding equality became more strident and confident. A new culture, positively influenced by the introduction of the Fair Employment Practices Committee, created a framework within which attitudes could change. State and federal policies combined with labor market demands to help break down strongly constructed racial barriers.

Labor scarcities also led to the acceptance of relocated Japanese Americans and even prisoners of war for approved work. In early 1943 the employment division of the War Relocation Authority set up a regional office in Kansas so that some Japanese Americans held in location centers could assist on the farm or in Kansas households.<sup>49</sup> A few

did so. The employment of POWs was, initially, contentious. The Regional Management-Labor Committee, established under the auspices of the WMC, was vehemently opposed to the use of POWs in food processing plants and in manufacturing generally. This labor therefore was confined to farm work and road construction, which meant that POWs were idle during the winter months. In general, trade unions were opposed to all foreign labor employment in manufacturing, although the placement of one hundred Jamaicans at Sunflower Ordnance was deemed a success by the company.<sup>50</sup> Kansas farmers much appreciated the POWs' work, and by early 1944 farmers were anxious to retain the camps at Salina, Concordia, and Fort Riley. For the most part POWs harvested row crops and undertook general farm work. A few actually were employed in Salina's flour mills when no free labor was available. The fear that POWs would reduce wages does not seem to have materialized, and trade unions and their members gained comfort from the promise that when free labor became available, the POWs would be replaced.<sup>51</sup> As will be discussed later in this article, farm labor shortages could not be resolved by the casual use of POWs or interned Japanese Americans alone.

Women eventually were to play an important role in the Kansas war effort. However, as late as the spring of 1941, a federal report claimed that no female trainees were taking courses for welding, woodwork, sheet metal, and machine shop practice. The reason given for this exclusion was that women were not in demand for any of these occupations. The few women who were found in the aircraft industry were employed on sewing, fabric cutting, small parts assembly, and some doping work. Personnel staff did not anticipate any change in the duties of female employees because they believed the supply of males was sufficient to cope with all production work. By the summer of 1941, however, federal officials were anxious to explore the possibility of using women in production work. Indeed, by year's end defense centers reported that women were equal or even superior to men on some production jobs.<sup>52</sup>

46. *Ibid.*, Weekly Activities Report for week ending May 29, 1943; Labor Market Survey Reports, Labor Market Developments, Lawrence-Eudora-DeSoto, June 24 1943, RG183.

47. War Manpower Commission, Survey of Regional Director's Report, January 16-February 15, 1944; Karen Tucker Anderson, "Last Hired, First Fired: Black Women Workers During World War II," *Journal of American History* 69 (June 1982): 82-97.

48. O'Brien, "Kansas at War," 15

49. *Kansas City Times*, February 11, 1943.

50. War Manpower Commission, Survey of Regional Director's Report, November 16-December 15, 1943; *ibid.*, Regional Director's Report, December 15, 1944.

51. Patrick G. O'Brien, Thomas D. Isern, and R. Daniel Lumley, "Stalag Sunflower: German Prisoners of War in Kansas," *Kansas History: A Journal of the Central Plains* 7 (Autumn 1984): 191, 193; War Manpower Commission, Monthly Field Operating Report exclusive of Wichita and Kansas City Administrative Areas, January 1944.

52. Labor Market Survey Reports, Wichita, Kans. Industrial Activity and the need for WPA Employment, April 1941; *ibid.*, Survey of Labor Market in Wichita, May 11, 1941; *ibid.*, Summary of Wichita and Sur-

During the early years of World War II manufacturing companies refused or were reluctant to hire blacks or women for major wartime production jobs. By 1943 attitudes were beginning to change; Sunflower Ordnance, which was operated by Hercules Powder Company in DeSoto, eventually hired blacks and became a major employer of women. This 1943 photo is taken at Sunflower Ordnance near Lawrence.



By that time it was reported that increasing numbers of women, often former waitresses or servicemen's wives, were being trained successfully as welders. They joined farmers and cowboys on a new program at the Wichita National Defense Training School that dramatically increased the speed of training. After learning elementary welding in 150 hours these students joined seasoned operatives in the plant to continue learning on the job. Previously between four hundred and seven hundred hours of training were required before the trainee became a productive worker.<sup>53</sup> Using local sources, history professor Judith R. Johnson has found that some seven hundred women had put their names on a waiting list to undergo training at the Wichita National Defense Training School in early 1942. She also reported, however, that even twelve months later Boeing managers were not convinced that women could discharge a full range of duties in an aircraft plant.<sup>54</sup>

A greater degree of uncertainty existed in calculating the supply of female labor than of males. Potential employers and recruiters believed that women would find night shifts unattractive, that the range over which they would commute was significantly more restrictive than for males, and that as full employment for men became the norm, the incentive for their wives to work would be significantly reduced. The lesson was that war provides a powerful motivation to change habits. Once Kansas women became aware of the new employment opportunities awaiting them, they responded with enthusiasm. In

part that response reflected patriotism, but high pay and the excitement of the workplace also were powerful motivators. Unlike many other occupations, most women entered the aircraft plants on the same pay scale as did men. Type of work, not gender, determined pay.<sup>55</sup> However, few women progressed to the more highly paid supervisory positions and, as many had houses to run, overtime opportunities were not as great as for their male colleagues.

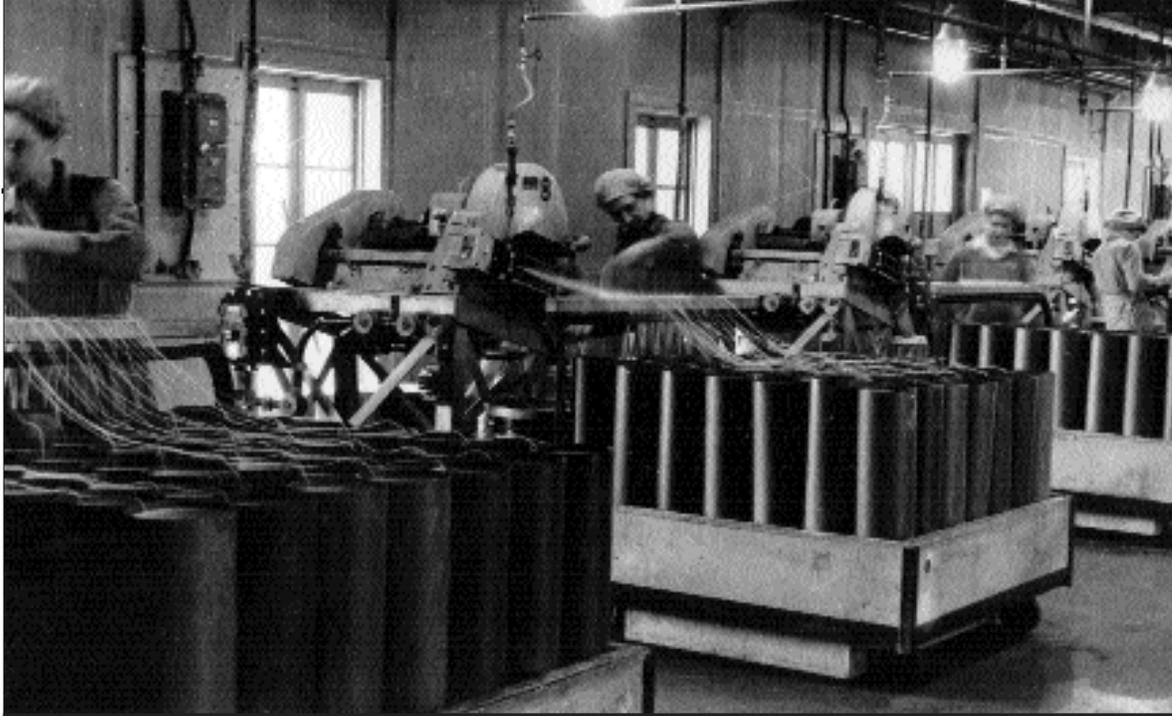
After Pearl Harbor employers in war oriented industries throughout America turned more toward women and away from young men coming into the labor market who, they assumed, would soon be called up for military service. Unfortunately, data on the number of females employed in particular occupations were not systematically collected, and thus we have to be content with isolated bits of information. In late 1942 Boeing anticipated that between 40 and 60 percent of its payroll would soon be female. Federal officials monitoring the labor market believed that the time had come to register women workers in Wichita as was currently being done in Lawrence. In the Lawrence–Eudora–DeSoto area, Hercules Powder Company, frantic to fill military orders, became a major employer of females hired explicitly to replace men called to military service. Although many were taken on as office and administrative personnel and thus they discharged traditional female roles, the company was forced, by manpower shortages, to experiment with

rounding Areas, June 1941, 9; *Kansas Labor and Industrial Bulletin* 11 (November 1941): 4.

53. *Topeka Daily Capital*, June 28, 1942.

54. Johnson, "Uncle Sam Wanted Them Too!" 40–42

55. Labor Market Survey Reports, Problem Area: Parsons, Kans. Survey, October 15, 1941, 9; Gregory, *Women in Defense Work During World War II*, 77–78



*In this 1944 photo women operators are seen cutting .30 caliber single-base rifle powder at Sunflower Ordnance near Lawrence. During the final years of the war women supplied 40 to 50 percent of the work force in major Kansas defense industries.*

women in tasks that they never had done before. This proved to be a commercial success. Whereas Hercules officials had previously assumed that the number of female workers on the double base power line, the most grueling and dangerous, could not exceed 15 percent, this figure soon was revised to 50 percent. The company's personnel department lagged behind in assessing women's ability to use technical equipment. A Hercules personnel report quaintly argued that "women in general have not had sufficient mechanical background to be responsible for the operation of such equipment." In spite of ingrained male skepticism throughout Kansas, by December 1944 women formed 39.2 percent of the labor force in Kansas City and 43 percent in Wichita.<sup>56</sup>

Not surprisingly, labor market planners and private companies were slow to see the advantages of exploiting underutilized female labor. The costs of this failure is evident when examining the situation in Wichita. Between April 1940 and March 1943 Wichita's total manufacturing employment rose from 7,750 to approximately 50,000. Migrants accounted for just over 60 percent of this increase in employment because the aircraft companies preferred to employ outsiders with some experience rather than train local women. One result was that scarce resources had to be used to construct 11,950 housing units, provided by both public and private agencies. If greater emphasis had been given to persuade women to become war production workers—"defensettes," as the press called them—the

need to provide services for migrants would have been significantly reduced. In April 1943 federal authorities urged Wichita's aircraft companies to change their hiring practices and to target women who were not then a sufficiently significant part of the labor force.<sup>57</sup>

The efforts of one special group of women to resolve war labor shortages have gone largely unrecorded. Farmers made up a sizeable proportion of the aircraft factories' work force. Because many agricultural laborers had experienced working with power machinery, they were highly prized workers in war plants. Wheat farmers, in particular, have their main activities concentrated upon planting in the fall and a few weeks of intensive harvesting in June. Unlike the drought-devastated Thirties, plentiful rain in Kansas kept yields high during the war years. It was essential that all crops, whether food or feed, be successfully harvested. Wives often ran farms when their husbands were employed in war work or serving in the armed forces, and at harvest their labor proved crucial.<sup>58</sup> Although impossible to quantify, the impact of female labor on the farm was of great significance: directly it kept the enterprise going, and indirectly it released manpower for vital nonfarm duties.

Before the wheat harvest of 1941, farmers approached the state employment service for assistance. The response of the employment service was to organize a cooperative plan engaging the county agents in all Kansas counties so

56. Labor Market Survey Reports, Wichita, Report as of November 1942, 6, 8; *ibid.*, Lawrence, Kans., Report for Lawrence-Eudora-DeSoto Area June 24, 1943, 19, 23-24; War Manpower Commission, Report of Regional Director, December 15, 1944, 3.

57. Labor Market Survey Reports, Special statement on Wichita, April 26, 1943; *Wichita Eagle*, April 5, 1942.

58. See, however, Caron Smith, "The Women's Land Army During World War II," *Kansas History: A Journal of the Central Plains* 14 (Summer 1991): 82-88; *Wichita Beacon*, October 25, 1942.

that farmers in districts having no local employment office could be helped. The employment service provided to county agents in the seventy-eight counties with no employment office a list of available farm workers, which the agents then passed on to local farmers. In counties that had employment offices, farmers could obtain information directly from the staff. The employment service contacted by mail some thirty-six thousand farmers throughout the state to secure numbers and types of workers needed. Detailed information on the acreage of grain planted and the likely yield had been collected for many years; this provided an invaluable guide to the number of harvest hands who would be sought. Finally, educational institutions were contacted to secure the labor of their students; the WPA and the NYA also were informed of vacancies.<sup>59</sup>

During 1942 the farm placement service in Kansas was absorbed into a national scheme to mobilize labor. The placement service mailed questionnaires to approximately eighty thousand farmers, and after the information was processed by Agricultural Adjustment Administration committees, the results were given to the state employment service. During wheat harvest, tents were erected at designated centers where skilled interviewers could quiz hands seeking work and direct them to farms where they were most needed.<sup>60</sup> The WPA and the NYA continued to cooperate by referring clients on their rolls; university and high school students registered with the employment service so they could be directed to harvest work. A systematic registration of all unemployed farm workers, even if they were available only for part-time work, was begun in 1942. Townspeople who could work even for short periods during harvest season also were listed. A register of farm equipment operators available for custom work was compiled and distributed. An indication of labor supply flexibility can be gleaned from the fact that in the fall of 1942 about three thousand high school and college students were employed on Kansas farms each weekend.<sup>61</sup>

59. *Kansas Labor and Industrial Bulletin* 10 (May 1941): 4–5.

60. *Ibid.* 11 (January 1942): 4; War Manpower Commission, Records of Bureau of Placement, Rural Industries Division, General Records of Farm Placement Service 1939–46, Kansas 1942.

61. Intervention in the harvest labor market was not new in Kansas. Attempts to match labor demand and supply date from the early years of the century. In 1918, 1919, and 1920, at a time of rapid inflation, Kansas farmers attempted to establish a uniform wage for harvest hands in the hope that it would bring order to a chaotic wage situation. See H. Umberger and E.L. Rhoades, *Kansas Handbook of Harvest Labor*, Kansas Extension Service Circular 23 (Manhattan: Kansas State Agricultural College, March 1921), 1–10; E.L. Rhoades, "Harvest Labor," in Kansas State Board of Agriculture, *Twenty-second Biennial Report, 1919–1920* (Topeka: Kansas

The production struggle was won with a mixture of planning, improvisation, and hard work. Two examples illustrate this observation. The first refers to the B-29, which dominated Boeing production by the end of the war, and the second relates to the importance of subcontracting. The B-29 Superfortress was one of the outstanding airplanes of World War II, some 1,664 of which were built at the government-financed Boeing Plant 2 in Wichita until June 1946. These B-29s were produced in such a rush that the planes were removed unfinished from the production line so output would not be delayed. Three modification centers were then established in Kansas where the planes were made airworthy. But a shortage of tools, combined with the army's lack of experience with the plane and adverse weather delayed the program. Dramatic intervention was necessary. Production staff came from Boeing plants in Seattle and Wichita to reorganize the modification program and prepare the first B-29s for overseas service. This period, a time of enormous difficulty between March 10 and April 15, 1944, became known locally as the "Battle of Kansas."<sup>62</sup> The battle was won.

All plane manufacturers relied heavily on subcontractors. A *Collier's* journalist was deeply impressed by the remarkable ingenuity displayed by Wichita subcontractors in 1942. Old machinery, adapted buildings, learning by doing, and technical skills learned on the farm combined to produce high quality work.<sup>63</sup> The ability to respond rapidly to pressure was a priceless Kansas war asset. These gifts were present before Pearl Harbor; they materialized when the nation needed them most.

The war enabled Kansas to create a well-trained labor force and an industrial plant far in excess of what was in place in 1940. For four years the population enjoyed both high manufacturing wages and buoyant prices for agricultural products, and as a result, many Kansans became accustomed to a highly desirable lifestyle. As early as the spring of 1942 a journalist reported that a mechanic, machinist, or press operator working in one of Wichita's defense plants was as likely as a white-collar worker to attend a semiformal dance in one of the city's swanky dance halls. Golf, a sport that before 1940 had not been part of the

State Board of Agriculture, 1920): 204–15; War Manpower Commission, Records of Bureau of Placement, Rural Industries Division Farm Labor Market Reports, Region 9, Kansas, October 1942.

62. Bowers, *Boeing Aircraft Since 1916*, 275–79.

63. Denver Lindley, "War in the Heart of Kansas," *Collier's* 110 (November 14, 1942): 16, 38–40.

blue-collar worker's leisure program, was enthusiastically taken up by airplane workers. Leisure was important to workers toiling under constant pressure, and its value was recognized by major employers. Beech, Boeing, and Cessna organized social and recreational events for their employees. Indeed, these companies attached such importance to these initiatives that full-time directors, assisted by support staff, were hired to coordinate out-of-work activities. On average defense workers were youthful, and many were enthusiastic participants in sports teams. Each plant was able to form baseball and basketball teams that played before passionate crowds. Apart from team games, defense workers enjoyed fishing and duck hunting. Bowling became so popular that some alleys remained open all through the night so that those on shift work could play regularly.<sup>64</sup>

Defense work was more than the experience of regular high-pay employment. It often meant being part of a lively community, forming new friendships, and participating in a range of interesting activities that would have been closed to "ordinary" people before the war started. Once hostilities ceased, however, this prosperous life, which had been bolstered by extraordinary but temporary circumstances, was threatened. The joys of peace must have been tempered with the realization that the excitement of bustling urban centers such as Wichita could not be maintained for all. Many Boeing workers had come from small towns and rural communities.<sup>65</sup> The prospect of a returning to relative isolation cannot have appealed to all those who had chosen to leave that environment. Women, and some African Americans, had experienced striking economic advances during the war and had made significant inroads into jobs previously closed to them. Any feeling of well-being was, however, tinged with apprehension as the rumors of war contracts being terminated proliferated. Would these groups be the first casualties of the peace on the basis of last hired, first fired? If that happened, how would previously marginalized groups accept being pushed to the sidelines again? Having tasted the fruits of a regular manufacturing wage, the prospect of casual employment whether in Wichita, Kansas City, or Sali-

na, or back home on farms and stores in such places as Wellington and Sublette, had little appeal.

Observers opined that the state faced grave problems during the inevitable conversion, or using the term then generally espoused, "reconversion," to patterns of peacetime demand.<sup>66</sup> War-inspired economic development had not been distributed evenly across Kansas; nearly all gains in manufacturing employment were in just ten war plants. By far the greatest concentrations of war industries were in Kansas City and Wichita. However, while the former had seen the establishment of several civilian-based industries, this had not been the case in Wichita where during World War II no factory producing goods directly for civilian consumption had been founded. At the end of the war, the numbers employed in aircraft production in Wichita had reached half as many again as were employed in that industry in the whole country in 1940. Moreover, seventy-seven subcontractors with a substantial work force relied on the aircraft companies for their survival. Little wonder that Sedgwick County was viewed by both state and federal policymakers as the number one problem area for peacetime conversion. By far the greatest concentrations of war industries were in Kansas City and Wichita.<sup>67</sup>

As historian Craig Miner reported, by the fall of 1945 some twenty thousand Wichita residents had lost their jobs. However, the contraction in the city's population was not as significant as had been feared, and it actually began to increase during the following year. The city, which owed its wartime prosperity to federal expenditure, soon received an unexpected boost to its fortunes from that same source. The Korean War and the subsequent Cold War led to a significant increase in defense expenditure from which Kansas aircraft plants benefited. In addition, Beech and Cessna came to dominate the market for light aircraft while also engaging in military contracting and subcontracting. In Miner's words, "the city hardly had time to notice the transition from one war to the next."<sup>68</sup> Wichita avoided the postwar economic slump feared by pessimists. Instead aviation, especially military aviation, continued to fuel the Wichita economy in the post-1945 world. 

64. *Wichita Eagle*, March 8, 1942.

65. *Wichita Beacon*, October 25, 1942.

66. Waters, "Postwar Employment in Kansas," 43–46.

67. For an attempt to place Kansas in a national setting, see "Wartime Changes in Regional Concentration," *Survey of Current Business* 25 (March 1945): 14–20.

68. Miner, "The War Years in Wichita," 272–75.