Women workers build transparent noses for A-20 attack bombers during World War II. Courtesy of National Archives at College Park, Maryland.
The majority of the male labor force shifted from material extraction to material processing to working with people and information.

Throughout history, most men were engaged in primary occupations such as farming or fishing, while a few craftsmen made artifacts and a handful of priests, scribes, and officials worked with their heads rather than their hands. The Industrial Revolution broke that pattern, transforming millions of farmers into factory workers. In Great Britain, the first country to industrialize, factory workers outnumbered farm workers by 1840. In the United States, a comparable shift in the occupational balance occurred shortly after 1900. This shift from the primary occupations of material extraction to the secondary occupations of material processing continued for more than half a century. By 1970, the proportion of the labor force engaged in primary occupations had declined to less than 5 percent.

The subsequent shift from secondary work with tools and materials to tertiary work with information and people, already under way in 1900, gathered momentum throughout the century and by 1970, more men held white-collar than blue-collar jobs. The proportion of the male labor force employed in tertiary occupations—professional, technical, managerial, clerical, and service work—more than tripled during the century, from 21 percent in 1900 to 58 percent in 1998.

An upgrading within each of these categories became apparent after 1960, when the ratio of upper white-collar occupations (professionals, managers, officials, technicians) to lower white-collar occupations (mostly clerks and salesmen) increased significantly, as did the ratio of upper manual occupations (craftsmen and skilled artisans) to lower manual occupations (machine operators and laborers).

The long-term shift from digging, riveting, and hammering to filling out forms, negotiating agreements, and writing software continued unabated. Even in straightforward industrial production, computerization expanded the need for administrative activities while minimizing the demand for physical labor. Blue-collar workers were increasingly found at desks rather than workbenches.
Men’s Occupations
Percentage of male workers employed in each economic sector
The decline of the farm population reflects a long process of attrition driven by huge technical advances in agriculture. During the first half of the century, the number of farms in the United States did not change markedly. Thus, the number of farms at midcentury—5.4 million—was only slightly lower than the 5.7 million farms that were operating in 1900. But from 1950 to 1997, when the last Census of Agriculture of the century was published, the number of farms—and farm operators—declined sharply, from 5.4 million to 1.9 million.

The principal cause of this reduction was the rapid improvement of agricultural productivity as new methods and machinery were introduced. From 1900 to 1997, the yield of wheat per acre tripled, while the time required to cultivate an acre of wheat decreased from more than two weeks to about two hours. At the same time, the yield of corn per acre increased fivefold, while the time required to cultivate an acre of corn declined from thirty-eight hours in 1900 to two hours in 1997.

These gains in productivity were the result of several kinds of technological advances, jointly applied. Tractors began to replace horses for planting and harvesting soon after 1900. Their speed, power, and efficiency increased from year to year. By about 1950, tractors wholly replaced the horses, donkeys, and mules that had served farmers for millennia. Chemical fertilizers and pesticides, unknown in 1900, accounted for about 5 percent of farm production costs in 1950 and about 20 percent by the end of the century. At the same time, the agricultural experiment stations of the grain-producing states worked continuously to improve the hardiness and yield of crops by selection, hybridization, and, later, genetic engineering.

Large-scale farmers were better able than small-scale farmers to take advantage of these new methods and superior products as they became available. They were also better able to protect their farms from the vagaries of temperature and rainfall that beset all farming operations. Unable to compete, many small-scale farmers were forced to give up their farms. In addition, many less efficient farmers were pushed off the land during the periodic crises brought on by droughts, floods, high interest rates, and price fluctuations. Others left the farms to pursue job opportunities that emerged in rural areas as industrial and commercial enterprises decentralized. As a result of these trends, between 1950 and 1998, the number of Americans employed in agriculture declined by 53 percent, while the size of the average farm more than doubled.

At the end of the century, the surviving farm operators were a distinctive population—overwhelmingly white (98 percent), male (92 percent), and middle-aged or older (their average age was fifty-four). The great majority had lived on the farms they owned and operated for ten years or more. But only about half of them worked full-time at farming; the others also had jobs in town.
Farm Operators
Millions

1900 = 5.7
1997 = 1.9
Even in blue-collar occupations, men’s work became cleaner, less strenuous, and much safer.

Occupational safety improved significantly throughout the American economy. In coal mining and railroading, two of the most dangerous occupations in the United States, total work accidents declined precipitously during the century. Work injuries showed a similar trend in most other occupations.

At the beginning of the century, men still loaded hundred-pound pigs of iron into boxcars without any kind of mechanical assistance. Frederick Taylor, the father of scientific management, became famous by teaching them how to do it faster. Serious injuries were routine.

The factories of that era were typically dark, cluttered, poorly ventilated, and filthy. Men worked in searing heat at furnace doors and in icy drafts a few yards away. At the end of the day, covered with grease and grime, they returned to homes that had no running water.

In the course of the century, more men found white-collar jobs, and the physical conditions of blue-collar work got better in every way. These improvements were driven primarily by changes in production technology. Workers were moved farther from harm and given much better protection when they were close to danger. Forklifts and conveyors took over the heavy lifting. Safety devices were added to every type of machinery. Factories were cleaned up and air-conditioned. Automatic monitoring systems were installed to warn of dangerous conditions.

Other factors that influenced the decline of industrial accidents were the expansion of tort liability, which exposed the makers and owners of industrial equipment involved in accidents to expensive litigation; the inclusion of workplace safety as a bargaining issue with unions; and government-imposed safety regulations.
Employee Fatalities: Coal Mines and Railroads
Annual Number Killed at Work
Propelled by advances in technology, the ratio of engineers to population increased steadily. The comparable ratio for lawyers and physicians, however, remained largely unchanged until 1970, when it began to rise markedly.

The supply of engineers per thousand population increased in every decade, driven by technological progress and increasingly complex production processes. Most engineers were middle-level employees of large enterprises. At the end of the century, a bachelor’s degree was still sufficient for licensing in many engineering specialties.

The relative supply of lawyers was more responsive to trends in social policy than to technological progress. Because requirements for entry were raised during the first half of the century and the size of law schools was effectively restricted, the ratio of lawyers to population was slightly lower in 1970 than in 1900. The number of lawyers per thousand population nearly tripled between 1970 and 1998, however, largely in response to the widening role of governments and a boom in litigation.

The relative supply of physicians declined early in the century, primarily as a consequence of the 1910 Flexner Report, which brought reform to the standards and curricula of U.S. medical schools and closed marginal schools. As a result, the number of physicians per thousand population remained almost unchanged from 1920 to 1970. Licensing requirements continued to be raised until certification in some specialties involved eight or more years of formal training. Most physicians were independent practitioners. The restriction of supply in the face of increasing demand gave physicians the highest average incomes of any occupational group. Such restrictive policies were largely abandoned after 1970 in response to public pressure, as well as massive new funding from the Medicare and Medicaid programs (see page 152).
Engineers, Lawyers, and Physicians
Per thousand population

1900 1920 1940 1960 1980 2000

Engineers
1998 = 7.6

Lawyers
1998 = 3.5

Physicians
1998 = 2.7

1900
Physicians = 1.7
Lawyers = 1.4
Engineers = 0.5
The proportion of American men who were in the labor force declined.

The labor force participation rate of adult men gradually decreased from 86 percent in 1900 to 75 percent in 1998. The century’s peak labor force participation rate—88 percent—occurred during World War II.

The decline in labor force participation was most conspicuous for men aged sixty-five and older. Two of every three were working or looking for work in 1900. By 1998, only one of six was so engaged. The decline was steep and steady, and it was well under way before the introduction of Social Security and subsequent expansion of private pension plans. This precipitous decline ended in the late 1980s, but whether this portends an increase in the labor force participation of men aged sixty-five and older was still not clear at the end of the century.

The withdrawal of younger men from the labor force can be traced to a variety of factors, including the following: (1) increased involvement in full-time higher education; (2) the availability of income support for people with mild disabilities; (3) military and civil service pensions awarded after relatively short service; (4) early retirement from corporate employment; (5) illicit gains in the drug trade and other criminal activities; and (6) a wider distribution of investment income.

Education, marriage, and race had striking effects on labor force participation rates. Only 7 percent of male college graduates under sixty-five were out of the labor force in 1998, compared with 25 percent of men in the same age group who had not finished high school. Married men of any age were more likely to be in the labor force than single, divorced, or widowed men. Black men had a lower-than-average participation rate, but Hispanic men had a higher-than-average rate.
The Shortening of Men’s Working Lives
Percentage of adult men in the labor force

1900 = 86%
1900 = 63%
1998 = 75%
1998 = 17%
In 1890, the typical factory work schedule was ten hours a day, six days a week, for a total of sixty hours. Thereafter, it fell steadily, reaching thirty-five hours per week in 1934. Expecting this trend to continue, most observers anticipated the advent of a twenty-hour workweek. It never happened. The average factory workweek climbed to forty-five hours at the peak of production during World War II, declined to forty hours after the war, and remained at that level until the early 1980s, when it began to inch upward. By 1999, the average manufacturing employee worked about forty-two hours per week.

The hours of office workers were slightly shorter and much more comfortable in 1900. While factory workers ate lunch at their machines, office workers came in later and went home for a long lunch at midday. Saturday became a half-day for both groups after 1920 and disappeared from most work schedules around 1960. Office workers continued to come in later and work shorter hours throughout the century.

Retail store employees always had heavier-than-average schedules. Thirteen-hour workdays were common in retail stores in the early years of the century. At the end of the century, retail employees worked shorter hours, but they were often required to work on weekends and holidays.

Unlike weekly and daily hours, annual work hours continued to decline slowly because of longer vacations, more sick and parental leave, and time off for obligations such as voting, jury duty, and military reserve service.

Average work hours are calculated for full-time or full-time-equivalent workers and do not include the steadily increasing numbers of part-time and seasonal workers or multiple jobholders. Taken together, these workers constituted about a third of the U.S. labor force at the end of the century.
Work Hours in Manufacturing
Average hours per week for full-time workers

1900 = 53 hours/week

1999 = 42 hours/week

Great Depression

World War II
The massive entry of women into the paid labor force would have been impossible without a drastic reduction in the time that most women spent on household tasks such as cleaning, cooking, baking, sewing, washing, ironing, and other domestic maintenance activities.

Among the married women interviewed in Middletown (Muncie, Indiana) in 1924, only 22 percent had held a full-time job at any time during the preceding five years. The corresponding figure for 1999 was 83 percent.

The chart, based on the community survey conducted by Robert and Helen Lynd in 1924 and on the replications of that survey by Theodore Caplow and his team in 1977 and 1999, tells the story. In 1924, 87 percent of married women spent four or more hours doing housework each day. By 1977, the comparable figure was 43 percent. By 1999, it had plummeted to 14 percent.

This remarkable reduction was the result of the mechanization and simplification of housework. A variety of innovations—vacuum cleaners, central heating, gas and electric stoves, refrigerators, freezers, microwave ovens, blenders, dishwashers, washing machines, dryers, and many smaller devices—led to the mechanization of housework (see page 98). Prepackaged meals, wash-and-wear fabrics, supermarkets, and fast-food restaurants greatly simplified household tasks.

If anything, the figures understate the reduction of housework that actually occurred. In 1890, about two-thirds of business-class wives in Middletown had full-time servants. By 1924, only one-third of business-class wives in the Middletown sample had full-time servants. In 1999, only one of the 397 women in the community survey had full-time help at home.
Daily Housework in Middletown
Percentage of Middletown housewives in each category

- 4 hours or more
- 2–3 hours
- One hour or less

<table>
<thead>
<tr>
<th>Year</th>
<th>4 hours or more</th>
<th>2–3 hours</th>
<th>One hour or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924</td>
<td>87%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td>1977</td>
<td>43%</td>
<td>45%</td>
<td>12%</td>
</tr>
<tr>
<td>1999</td>
<td>53%</td>
<td>33%</td>
<td>14%</td>
</tr>
</tbody>
</table>
Married women entered the paid labor force in large numbers. In 1900, only 6 percent of married women worked outside the home, usually when their blue-collar husbands were unemployed. Among wives with children at home, very few worked at all. Almost half of single women held jobs, but they usually stopped working when they married or, at the latest, when they got pregnant, and most never worked for pay again. About a third of widowed and divorced women worked, typically out of economic necessity. Never-married women with children were virtually unknown.

The labor force participation rate of single women peaked in World War II and then declined as large numbers of them pursued higher education. The sharp jump in their work force participation in 1967 is a statistical artifact reflecting an increase in the defined minimum age of the labor force from fourteen to sixteen years old. In the early 1970s, the labor force participation rate of single women began a steady rise to nearly 70 percent by 1998 (see chart at upper left).

The labor force participation rate of widowed, divorced, and separated women remained fairly stable until 1940, when it began a gradual rise to nearly 50 percent (see chart at upper right). These women were considerably older on average than those in the other three groups, and many had income sources such as survivors’ benefits or alimony payments.

The steady movement of married women into the labor force began around 1920, spiked during World War II, and never abated (see chart at lower left). In 1998, more than 60 percent of all married women living with their husbands worked for pay outside the family home. Their labor force participation was only slightly lower than that of single women and considerably higher than that of widowed, divorced, and separated women.

Data on the labor force participation of married women with children under age six go back only to 1950, but the rise since then has been sharp (see chart at lower right). Their labor force participation rate increased more than fivefold, from 12 percent in 1950 to 64 percent in 1998, helping to create an entire industry of paid day care in the process.
Labor Force Participation of Women
Percentage of each group in labor force

Single
- World War II
- 1900 = 44%
- 1998 = 69%

Widowed, Divorced, or Separated
- 1900 = 33%
- 1998 = 49%

Married
- World War II
- 1900 = 6%
- 1998 = 61%

Married, with Children under Age 6
- 1950 = 12%
- 1998 = 64%
Attitudes toward the employment of married women shifted from strong disapproval to equally strong approval.

In 1936, a Gallup poll asked a national sample, “Should a married woman earn money if she has a husband capable of supporting her?” By overwhelming majorities, both men and women said she should not. In 1972 and later years, the General Social Survey asked an almost identical question: “Do you approve or disapprove of a married woman earning money in business or industry if she has a husband capable of supporting her?” By overwhelming majorities, both men and women approved.

Although the questions were the same, the context of the responses changed. In the early part of the century, as the Lynds’ Middletown studies demonstrate, the income of a married man was ordinarily adequate to support his family at the accustomed level of his occupational class. Women, moreover, carried an enormous burden of housework (see page 36). At that time, the employment of women was associated with lower family status. The wives of business and professional men rarely worked outside the home. But the intermittent unemployment of factory workers, even in prosperous times, forced their wives to take jobs outside the home when their husbands were idle. A woman who worked while her husband was employed was often thought to be taking the job of another family’s breadwinner.

By the end of the century, the situation had changed dramatically. Except for men in the top professions, the income of a married man was ordinarily not adequate to support a family at the usual level of his occupational class. The burden of housework had been substantially reduced. Many women received education appropriate to professional work and expected to work even after they married and had children. The employment of women ceased to be associated with lower family status, and became the modal pattern in middle-income families and widespread in upper-income families.
Attitudes toward Married Women Working
Percentage of respondents

1936 = 82% 1996 = 83%
1936 = 18% 1996 = 17%
The concentration of working women in a few occupations diminished as they found employment throughout the economy.

In 1900, three out of four working women were engaged in domestic service, farming, or factory work, particularly in the nation’s textile mills and shoe factories. A third of working women were domestic servants. Teaching and nursing were the only professions generally open to women; female managers and officials were rare.

During the first half of the century, the concentration of women in farming and domestic service was replaced by a new concentration in clerical and sales jobs, still poorly paid but more comfortable and respected. The proportion of women in factory work declined from a quarter to less than a fifth of the female labor force.

By the end of the century, farming, domestic service, and factory work had become less important for working women. The largest number of women were still in the traditional female occupations of clerical work, sales, teaching, and nursing, but an almost equal number had found more diversified employment throughout the economy.

Women constituted about half of all managers, administrators, and officials in the economy; nearly half of college teachers; more than half of psychologists and accountants; and more than a fourth of lawyers and physicians. Although circumstances were changing at the end of the century, men still predominated in the upper reaches of these occupations.
Women's Occupations
Percentage of the female labor force

Farming and Domestic Work

Factory Work

Clerical and Sales Work

Teaching, Nursing, and Other Professions
Women and blacks were represented only marginally in law, medicine, and engineering until 1970, when they began to move into these influential professions.

At the beginning of the century, only about one of twenty physicians, one of a hundred lawyers, and one of a thousand engineers were female. After 1970, however, women flooded into law schools and medical schools, and many moved from the lower rungs of those professions into more prestigious specialties. Even in engineering, the number of women increased dramatically. By 1998, women constituted 29 percent of lawyers, 26 percent of physicians, and 11 percent of engineers.

In 1940, the earliest year for which reliable information about the racial composition of individual occupations is available, there were approximately four thousand black physicians, one thousand black lawyers, and three hundred black engineers in the entire country.

After the civil rights revolution of the 1960s, the situation changed somewhat. There were proportionately fewer black physicians in 1970 than in 1940, but three times as many lawyers and twelve times as many engineers. Still, they constituted less than 2 percent of their respective professions, and the doctors and lawyers served primarily black clienteles.

Between 1970 and 1997, however, black representation in medicine, law, and engineering roughly doubled. Equally important, most black physicians treated patients of all racial and ethnic backgrounds, and many black engineers worked for large firms. Some black lawyers still served mostly black clients, but many others did not.

At the end of the century, the proportions of women and blacks among students preparing for medicine, law, and engineering were higher than among active practitioners. As a result, the post-1970 trends were set to continue for many years to come. The sharp growth of Hispanic and Asian-American representation in the major professions, which occurred later than for women and blacks, will also persist far into the next century.
The unemployment rate fluctuated with the business cycle and military manpower needs.

In the first half of the century, the unemployment rate oscillated from a low of 1.4 percent in 1918–1919 to a peak of 24.9 percent in 1933 and then to another low of 1.2 percent in 1944. After 1950, these fluctuations became less severe as the business cycle moderated (see page 244).

Before and after the Great Depression, unemployment was largely a blue-collar affliction. Nearly two-thirds of the male factory workers in a sample of Middletown families interviewed by the Lynds had at least one spell of unemployment during the first nine months of 1924. None of the white-collar employees in the sample had that experience.

At the end of the century, blue-collar workers had about twice the unemployment risk of white-collar workers. Within the white-collar group, sales and clerical personnel had about twice the risk of managers.

Education, race, and age generated differences as well. High school dropouts had about twice the unemployment risk of high school graduates, who in turn had about twice the risk of college graduates. Blacks had about twice the risk of whites. Men younger than age twenty-four had about twice the risk of men older than twenty-four. These relative differences tended to persist even as the rate of unemployment fluctuated.
Unemployment Rate
Unemployed persons as percentage of the civilian labor force

Great Depression
World War I
World War II
Vietnam War

1900 = 5%
2000 = 4.1%
The unionized share of the work force quadrupled from 1900 to 1920 despite heavy legal restraints on union activities. It peaked after World War I and then declined steadily until the advent of the New Deal. The National Labor Relations Act of 1935 legalized collective bargaining and installed orderly procedures for organizing unions. The immediate result was the recruitment of millions of new union members. They constituted about a quarter of the civilian labor force from 1950 to 1970. After 1970, the unionized portion of the labor force declined steadily.

The incidence of strikes followed a less regular but roughly parallel trend. From 1945 to 1970, hundreds of major strikes involving a substantial share of the labor force occurred every year. The strikes of recent years involved no more than two-hundredths of 1 percent of the labor force in any given year.

In the heyday of organized labor, union strength was concentrated in heavy industry, construction, mining, and railroading. In the latter decades of the century, the biggest unions represented government workers such as teachers, postal employees, police officers, and garbage collectors, although pockets of strength still survived in the private sector. At the end of the century, about half of all government employees were unionized, compared with only one in ten workers in the private sector.

The decline in the unionized share of the labor force can be traced to many factors. The federal government effectively addressed important union issues by assuming much of the responsibility for workplace safety, creating and enforcing wage and hour rules, offering incentives for worker training, requiring notice of plant closings, providing a public pension system, and supervising private pension plans. Public distrust of unions grew in response to scandals that connected unions to organized crime. But the most important sources of the decline in the unionized portion of the work force are probably rooted in fundamental changes in the world and U.S. economies. These include the globalization of the labor market, along with the continual restructuring of U.S. enterprises through automation, mergers, downsizing, outsourcing, expanded fringe benefits, and the extensive use of part-time and temporary workers.
The Rise and Decline of Labor Unions
Union members as percentage of the civilian labor force

1900 = 3%
1998 = 12%