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Volume Author/Editor: Clarence D. Long

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Chapter Author: Clarence D. Long

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civilian employment of 60 million in April 1951. It could get another 5 million equivalent workers by increasing hours. This 8 percent potential rise in civilian employment is less than the almost 30 percent increase in the five years after April 1940. Still, if it is assumed that the mobilization is now, relatively speaking, about where it was in the spring after Pearl Harbor, the effective employment yet possible is on a par with that realized after April 1942.

## 2 THE LABOR FORCE BEFORE WORLD WAR II

In spring 1939 the United States had a little over 44 million employed and nearly 10 million unemployed.<sup>1</sup> Its labor force, the sum of these two figures, was somewhat below what it would have been had the same proportion of working age population been at work or seeking work as in such years of peace and low unemployment as 1930 or 1947.<sup>2</sup> A third of a million were in uniform. Germany by early summer had reduced unemployment to almost nil, restored its slightly depressed labor force to the same proportion of the population as in 1925,<sup>3</sup> and mustered a military force which, though still far under its subsequent strength, was

<sup>1</sup> My tables for the United States (1, A, and 2, A), which are based on Work Projects Administration and Bureau of the Census monthly sample surveys of about 25,000 households, do not begin until 1940 and, in order to keep clear of the summer influx, which is particularly large in this country, compare Aprils instead of mid-years. The labor force, armed forces, unemployment, and civilian employment in April 1939 are computed to be 54.1, 0.3, 9.7, and 44.1 million respectively. It was assumed that between April 1939 and 1940 the labor force rose 0.7 million from the growth in population. Armed forces and unemployed were taken from the *Economic Almanac for 1950* (National Industrial Conference Board), p. 164; civilian employment was the residual.

<sup>2</sup> The proportion of population 14 and older in the labor force in April 1940, as revised by the Census to be comparable to the 1945 enumeration technique, was 54.1 percent, 1.8 percent below the 55.9 percent measured by the same technique in 1947 and 2.0 percent below the 56.1 percent in 1930. I revised the labor force in 1930 to make it comparable to the 1945 technique. With a working age population in 1940 of 101 million, this deficiency in the labor force proportion involves 1.8 million workers. Since the 1939 labor force is estimated by extrapolating backward from 1940 on the basis of mere population change, the estimated deficiency would be approximately the same. See Section 2 for an explanation of the 1945 measurement technique.

<sup>3</sup> Leo Wolman has disclosed that early increases in employment claimed by the Nazis were really a statistical reclassification in which formerly idle persons doing make-work comparable to the United States WPA were regarded as employed: 'The Meaning of Employment and Unemployment', *The State in Society* (Oxford University Press, 1940). By 1939 approaching war had probably made German employment reasonably genuine.

the most effective at that time. Britain, with one in sixteen workers idle,<sup>4</sup> the labor force somewhat above the proportion of the population to which it was to return after the war, and armed ranks expanding, had its manpower only partly ready when in the first hours of September the Nazi divisions crossed into Poland and set off World War II.

This paper reviews the labor force changes in these three countries during six years of arming and fighting. It also compares the additions in the United States, Great Britain, Germany, and Canada at the peak; and inquires how the first two built up their labor forces by large relative amounts, Canada by smaller numbers, and Germany by none at all. First, however, it may be useful to explain what is meant by the 'labor force'.

#### LABOR FORCE CONCEPT AND COVERAGE

The concept varies in some degree among the four countries, though without invalidating analysis of wartime changes. In the United States the labor force includes, as of a certain week, both 'employed' and 'unemployed'. The latter covers those reported seeking jobs and able and willing to work for going wages. The former embraces wage and salary earners, military and civilian personnel of government, employers and self-employed such as farmers and practicing physicians, and children and wives on farms or in family stores working without pay to produce a marketable product. The labor force takes in persons, mostly employed, who are on vacation, temporarily ill, on strike, or weather-bound. It leaves out children under 14, housewives and students as such, retired or disabled persons, and inmates of institutions. It excludes men and women in illegal occupations such as gambling or prostitution (as far as they report their activities to household interviewers). It does not deduct for fractional employment of parttime workers.

In spring 1940 the Work Projects Administration began to collect monthly data from a sample of about 25,000 of the nation's households, using an interview method instituted at the decennial enumeration. The Census Bureau subsequently took over the survey and in mid-1945 modified the interview technique so as to rely less on the commonsense or caprice of enumerators. In the first month of the modified technique

<sup>4</sup> The British unemployment figures for 1939 did not include persons in industries or occupations not covered by unemployment insurance. If these were included, the unemployment rate would have been somewhat higher than 6 percent.

a test survey, asking families both old and new questions, indicated that the new schedule swelled the estimate by 2 million, mostly wives and students who also did some parttime work. Accordingly, the Bureau revised the earlier data upward. It is this revised series that we use.

The United States data are thus from official census sources.<sup>5</sup> In Britain no census of the labor force had been taken between 1931 and 1951. Estimates for 1939-48 were therefore constructed from the 'working population', compiled from records of unemployment insurance administration, private employers, and government agencies including armed forces.<sup>6</sup>

The Canadian labor force and armed force for June 1941 are from the Decennial Census, and for June 1942-45 from 'Estimates of the Canadian Labour Force and its Composition 1941-7', a mimeographed table prepared by the Research and Statistics Branch, Department of Labour, Ottawa. The latter are merely rough projections from the Census of 1941, are not strictly comparable in definition with the quarterly surveys instituted in November 1945, and exclude both students and women gainfully occupied on farms or in farm homes. The August 1939 employment and armed forces are from 'Estimated Manpower Distribution' also of the latter agency. Unemployment for that date could

<sup>5</sup> United States: *Sixteenth Census, 1940, III, Part I*, p. 99; *Monthly Report on the Labor Force, Population, Series 59*, also Series P-57; *Labor Force Bulletin 6*, July 1945, pp. 12-15; *Current Population Reports, Series P-50*; unpublished Census estimates of the age distribution of the armed forces and of the population.

<sup>6</sup> Great Britain: *Annual Abstract of Statistics, 1935-46*, No. 84; *Monthly Digest of Statistics*; *National Register, 1939, Report*; *Registrar General's Statistical Review of England and Wales, 1943, 1945* (London); *Ministry of Labour Gazette*; H. Frankel, 'The Industrial Distribution of the Population of Great Britain in July, 1939', *Journal of the Royal Statistical Society*, 1945, p. 392.

Until 1948 unemployment insurance did not cover women working parttime, men 65 and older, women 60 and older, private indoor domestic servants, employers or self-employed, non-manual employees earning over £420 a year, established civil servants, permanent employees of local authorities, railways, and public utilities, excepted by certificate, teachers, armed forces, female professional nurses, policemen, and farmers' sons and daughters. Most of these omitted classes were approximated from the overlap in 1948 between the more and the less comprehensive coverages; but private domestic servants, men 65 and older, and women 60 and older were calculated separately. The mid-1945 labor force contained a few Irish, Norwegians, French, Dutch, and Belgians, but left out civilians and armed forces killed, as well as prisoners of war working in Britain. To adjust for the practice of counting a woman working parttime as half a member, after 1939 she was treated as a regular worker for comparison with United States data.

be calculated only roughly, by assuming that it bore the same ratio to 1941 as trade unions' idleness. Because of the weakness of the 1939 estimate of labor force, the crudeness of the annual interpolations and the lack of age and sex detail during 1942-44, most of the wartime analyses are confined to comparisons of June 1945 with June 1941.<sup>7</sup>

The labor force data of Germany are from the official census of 1939 and from the Kriegswirtschaftliche Kräftebilanz (War Economy Manpower Balance Sheet) of the Statistisches Reichsamts for 1940-44. The latter "were not always reliable and had frequently changing conceptual and territorial coverage", were based on questionnaires to be returned by employees, self-employed professional workers, and the like, on the membership lists of industrial, trade, and cultural organizations, and were subject to some gaps and duplications among organizations. The data were used in the study as adjusted for the above discrepancies by the *Strategic Bombing Survey*. They cover all gainfully occupied persons counting, beginning 1944, a small number of home workers, i.e., persons engaged in industrial work at home.<sup>8</sup>

### 3 THE LABOR FORCE IN MOBILIZATION: UNITED STATES, GREAT BRITAIN, GERMANY

It is convenient to divide the half dozen years of war into three 2-year periods: the first ending with Germany's attack on Russia, the second with its surrender in North Africa, the third with its defeat in Europe. The last few months of World War II get incidental attention, for Japan's surrender was an anticlimax to the German collapse. This section describes in some detail the assembling of labor resources by the three major countries and carries a statistical account for Canada in Charts 1, 7, and Tables 1, 2, 5-8.

<sup>7</sup> Canada: *Canada Yearbook, 1945 and 1947; Census of Canada, 1941, VII, Occupations, 12; Canadian Statistical Review; Labour Force Bulletin*; Department of Labour, Ottawa: *Labour Force Gazette, Estimates of the Canadian Labour Force and its Composition, 1941-47* (mimeographed).

<sup>8</sup> Germany: *Statistisches Jahrbuch fuer das Deutsche Reich, 1938; Wirtschaft und Statistik*, Feb. 1941, p. 50, Dec. 1940, p. 519; *Effects of Strategic Bombing on the German War Economy, U. S. Strategic Bombing Survey* (Overall Economic Effects Division, Oct. 31, 1945), Appendix Tables 1, 6, pp. 199, 202, 207; *Statistical Yearbook of the League of Nations, 1941-42* (Geneva, 1943), Table 3, p. 26; Frank Notestein, *Future Population of Europe and the Soviet Union* (Geneva, 1944), pp. 264-5.