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ECONOMIC MOBILIZATION COURSE

Comparison of economic mobilization in
World War II of UK, Germany and USSR, with
that of the US. ICAF. 25 Apr 47. 79p.

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THE INDUSTRIAL COLLEGE OF THE ARMED FORCES
Washington, D. C.

Economic Mobilization Course
1946-1947

Report on

FOREIGN RESOURCES

COMPARISON OF THE ECONOMIC MOBILIZATION IN WORLD WAR II
OF THE UNITED KINGDOM, GERMANY, AND UNION OF
SOVIET SOCIALIST REPUBLICS WITH THAT OF
THE UNITED STATES

Date Submitted: 25 April 1947

NOTES:

1. This publication is the report of a Student Officer Committee, prepared as a part of the Economic Mobilization Course at The Industrial College of the Armed Forces. The contents represent views and conclusions of the student officers. Publication by The Industrial College of the Armed Forces does not indicate approval or disapproval of the contents.

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THE INDUSTRIAL COLLEGE OF THE ARMED FORCES
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Economic Mobilization Course

Directive on Committee Problem

FOREIGN RESOURCES

SUBJECT: COMPARISON OF THE ECONOMIC MOBILIZATION IN WORLD
WAR II OF:

UNITED KINGDOM
GERMANY
UNION OF SOVIET SOCIALIST REPUBLICS

WITH THAT OF THE UNITED STATES.

SCOPE: Government organization and controls of the
following principal elements of industrial
mobilization in the subject countries:

1. Over-all planning and policy-making.
2. Manpower.
3. Materials.
4. Facilities.

PURPOSE: Recommendation (for consideration in planning for
the economic mobilization of the United States in
a future emergency) of desirable features of British,
German, and Soviet industrial mobilization in World
War II that might be adapted to United States needs
in any future mobilization.

REQUIRED:

1. Examination of the plans and policies of the
subject countries relating to government
organization and controls over economic
mobilization.
2. Comparison of the salient features of the govern-
ment organization and control of British, German,
and Soviet economic mobilization with those of
the United States.

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3. Conclusions, which will indicate which types of organization and controls gave evidence of greatest efficacy.
4. Recommendations, covering the important features of organization and controls developed by the United Kingdom, Germany, and the Union of Soviet Socialist Republics that might be considered suitable for incorporation in plans for the industrial mobilization of the United States in a future emergency.

INSTRUCTOR: Major Brower V. York, MI

CONSULTANTS: Mr. Watson O'D Pierce
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Mr. Clarke B. Louden

CONTACTS: To be arranged through instructor.

**COMMITTEE
ASSIGNMENTS:** See assignment list.

DATE ISSUED: 10 March 1947

**PRESENTATION
OF REPORT:** 25 April 1947

**FINAL REPORT
DUE:** 25 April 1947

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THE INDUSTRIAL COLLEGE OF THE ARMED FORCES
Washington, D. C.

12 March 1947

MEMORANDUM FOR COMMITTEE ON ECONOMIC MOBILIZATION

SUBJECT: Subcommittee Assignments

1. Reference is made to the committee and subcommittee assignments listed in Section II of the Foreign Resources Division Curriculum, 10 March - 25 April 1947.
2. The Committee on Economic Mobilization, also designated as Subcommittee Number 56, will prepare a report on the economic mobilization in World War II of the United States, United Kingdom, Germany and the Union of Soviet Socialist Republics.
3. The composition of this Committee is as follows:

Chairman - Don R. Ostrander, Colonel, Ord
Vice Chairman - Howard W. Quinn, Colonel, TC
Administrative Assistant - William V. McKaig, Commander, USN
Members - Irwin B. Anderson, Colonel, AC
 James G. Anding, Colonel, FA
 Joseph B. Daugherty, Colonel, QMC

THOMAS R. TAYLOR
Lt. Colonel, AC
Chief, Foreign Resources Division

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INTRODUCTION

1. World War II marks that point in history when the concept of total war was first put to the supreme test. In retrospect, it would appear that any attempt to implement this concept would have implied the total mobilization of economic resources of the belligerents, yet inability to adequately comprehend the scope of, plan for, control and make maximum utilization of economic potential was a universal fault common to both sides and shared by democracies and totalitarian states alike. /

2. In a democratic state, time consuming and revolutionary changes are required in making the transition from a peace to a war economy. This may explain the belief held by American industrialists just before Pearl Harbor that "the Roosevelt administration was using the national emergency as a pretext for furtherance of the more radical and social economic aims of the New Deal."^{1/} It may explain, too, how the House of Commons, on 30 May 1940, at a time when the Admiralty was mobilizing everything that could float to evacuate Dunkirk, could spend an entire session in the analysis of plans to facilitate more advantageous competition in world trade by British commerce.^{2/}

3. It would seem that the regulated economy of a totalitarian state could be shifted to a war status almost immediately at the command of the dictator. Yet while the Nazi state dictated its economy to prepare for, precipitate and execute a major war, it still did not reach maximum munitions production until late in 1944. The Soviet Union, with a state decreed economy from the days of its inception, began to solidify its war effort only when the Germans were at the gates of Stalingrad.^{3/}

4. In the final analysis, the difference between the war economies of democracies and totalitarian states is political rather than economic. The primary objective is always the maximum utilization of all resources.^{4/} The attainment of this objective is dependent upon the efficacy of the organization and controls employed, and the time consumed in their establishment.

5. The purpose of this study is to analyze, evaluate and emphasize desirable features of the organization and controls employed by the British, German and Soviet governments in their economic mobilization for World War II. This report is divided into two sections. Section I covers the broad aspects of over-all plans and policies, with particular reference to manpower, material and facilities. Section II makes a comparison of salient features of these plans and policies with those of the United States.

- 1/ Fortune Magazine, Fortune Quarterly Management Poll, New York, November 1941, p. 200.
- 2/ Steiner, George A., Economic Problems of War, New York and London, John Wiley & Sons, Inc., 1942.
- 3/ Industrial College of The Armed Forces, Report of the Committee on Foreign Resources, p. 28
- 4/ Steiner, op.cit., pp. 1,17,19.

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I. ECONOMIC MOBILIZATION PLANS AND POLICIES RELATING TO MANPOWER, MATERIALS AND FACILITIES.

A. United Kingdom.

1. British experience in mobilization for World War II provides striking lessons on organization in a democracy for modern war. It was demonstrated that, given efficient leadership plus comprehensive explanations of objectives, requirements and plans, the people will support the war effort fully. Britain successfully defended herself from destruction from the air; she mobilized powerful armed forces and deployed and supported them all over the world; also built ships and facilities and manufactured planes, tanks, guns and other munitions on a large scale. The country produced two-thirds of its food during the war against one-third normally, but it was necessary to substitute cereals for much of the meat normally consumed. Food production was subsidized and distribution was managed to assure the required amounts for children and a minimum for the poor but generally a bare subsistence. The government took about two-thirds of income and the direct war service of about two-thirds of the people between the ages of 14 and 65. The remainder did supplementary work while the country served as a base for the development and launching of powerful armed forces. 1/

Over-all Planning and Policy Making

2. During the period 1919-1934, mobilization planning in Great Britain was based on a concept of limited war with the possible use of sanctions under the Covenant of the League of Nations. The basic plan accepted as a fundamental premise the assumption that the Maginot Line and the naval base at Singapore would be held. 2/

3. The type of planning carried out prior to World War II was similar to that of World War I. It consisted largely of the preparation of the "War Book," which contained proposed statutes, emergency acts, orders-in-council, and other controls which were to be activated at the outbreak of hostilities. 3/ A tentative organization for administration and supply, based upon regional subdivisions, was prepared in case communications were interrupted by air attack. 4/

1/ Murphy, Mary E., Dr., The British War Economy, 1939-1941, Professional and Technical Press, New York, 1943. p. IX.

2/ The Industrial College of The Armed Forces, Department of Research, Industrial Mobilization Planning in the United Kingdom, November 1946, pp. 1-6.

3/ Ibid., pp. 1-6.

4/ Elliott, William Y., and Hall, H. Duncan, The British Commonwealth at War, Alfred A. Knopf, New York, 1943, p. 86.

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4. The level of authority at which national mobilization planning was carried out was that of the Prime Minister and his Cabinet. The principal organization for such planning was the Committee of Imperial Defense, whose function was to coordinate all plans for the defense of the Empire by means of studies assigned for review and report. The most important subcommittee was the Chiefs of Staff Committee, which consisted essentially of the Chiefs of Staffs of the fighting services meeting under the chairmanship of the Prime Minister or, on technical matters, a chairman chosen by the Committee. Industrial mobilization problems were handled by the Manpower Committee and the Principal Supply Officers Committee.^{1/} Although an advisory agency, the recommendations of the Committee of Imperial Defense were usually followed, since committee membership included many Cabinet Ministers and the Prime Minister was the committee chairman. All decisions and plans of the committee were consolidated and entered in the secret "War Book."^{2/} The administrative operation of the plans was not in any way the responsibility of the Committee of Imperial Defense. The Cabinet was responsible for strategy and economic organization generally, and for coordination of the whole administration. The necessary instructions were issued to the appropriate Minister and his department was made responsible for operation.^{3/}

5. The Committee of Imperial Defense functioned on a supra-departmental level which avoided departmental rivalries, delays and conflicts over authority. The advisory character of the Committee preserved democratic rights, while the authority of the Prime Minister insured that final plans were in full accord with the executive policy of the government. The Committee's planning was also integrated with that of the Empire and Commonwealth nations.^{4/}

6. The Imperial Defense College, established in 1917, gave training in the broadest aspects of imperial and world strategy to officers of all of the Armed Forces and to permanent civil servants from the United Kingdom and Dominion governments. Foreign policy and political considerations, as well as the relationship of economic, social, industrial and financial resources to the higher executive direction of war, were given careful study in courses of a year's duration.^{5/}

7. The period 1934-1939 began with the declared intention of the British Government to rearm the country. However, in spite of the warning occasioned by Munich in 1938, many phases of industrial

1/ Ibid., pp. 1-6.

2/ Elliott, William Y., and Hall, H. Duncan, The British Commonwealth at War, Alfred A. Knopf, New York, 1943, pp. 6-7.

3/ Ibid., pp. 129 and 148.

4/ Industrial Mobilization Planning in the United Kingdom, op.cit., pp. 9-10.

5/ Ibid., p. 12.

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mobilization were neglected. For example, the Ministry of Supply was not given sufficient funds, and the Treasury maintained rigid control over all expenditures. Cumbersome methods of financing rearmament and plant expansion were used.1/

8. In the first years of the war, trial-and-error methods were used because the government lacked well defined policies. The machinery of war production could neither be logical nor symmetrical, since it was never conceived as one plan. Its administrative structure grew piecemeal, and with the idea of disturbing existing organizations and procedures as little as possible. However, the organization did produce munitions of war in quantities few thought possible prior to the war. Just as the three fighting services retained their independent organizations throughout rearmament and the war, so also was the supply of weapons for the three services largely separate and differently organized.2/ In spite of heavy German bombing and the threat of invasion, full and accelerated production was maintained. Workers combined production with air raid watching, fire fighting and home guard training.3/ Mobilization was carried out through the use of normal government departments and a limited number of special agencies, which were headed by trained personnel from the permanent Civil Service. With the collapse of the French and the fall of Singapore, plans were recast on a long term basis. The political thinking of the first nine months of the war under the Chamberlain administration was repudiated and the second period of mobilization from May 1940 to May 1945, was vigorously undertaken by the Churchill coalition government.4/

9. The importance of the unification of military and industrial planning was recognized by the development of the Joint War Production Staff, a Cabinet committee to advise the Chiefs of Staff Committee. Its mission was to secure "complete fusion between military plans and thought and production plans and thought."5/ During the early stages of the war, production had been the weakest link. The Joint War Production Staff was not established until March 1942, although World War I experience clearly indicated that such coordination was essential.6/

10. The ultimate proof of the effectiveness of Britain's mobilization measures is apparent from a comparison, at progressive dates, of the national contribution towards winning the war. In 1938, only 6 percent

1/ Elliott, William Y., and Hall, H. Duncan, op.cit., pp. 171-172.

2/ "A Record of British War Production," The London Times, (London), 1945, Special Edition, pp. 1-2.

3/ Industrial Mobilization Planning in the United Kingdom, op.cit., p. 13.

4/ Ibid., pp. 6-7.

5/ Ibid., p. 12.

6/ Ibid., p. 12.

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of the national income was devoted to defense expenditures, in 1939 only about 14 percent, and in the early summer of 1940, only about 20 percent; yet four years later, it had risen to 55 percent.^{1/}

11. The following summary indicates the various mobilization agencies and their responsibilities as finally evolved:

- a. Ministry of Defense - under the Prime Minister. It replaced the Ministry for Coordination of Defense.
- b. Ministry of Production - Controlled basic production plans.
- c. Ministry of Supply - Controlled machine tools; operated the Royal Ordnance factories; contracted for all army material and for all stores in common use by the three services.
- d. Ministry of Aircraft Production - Responsible for production of planes and other Royal Air Force supplies.
- e. Admiralty - Responsible for navy and merchant marine shipbuilding and for naval supplies.
- f. Ministry of War Transport - Controlled all transportation and shipping.
- g. Ministry of Works and Planning - Controlled all construction.
- h. Board of Trade - Responsible for restriction of consumer goods production; controlled all factory and storage premises.

12. Prices and wages in Great Britain rose rapidly during the first years of the war. The rise of prices was checked by comprehensive measures of price control. Food subsidies, rationing, price control of transportation, fuel, and other essential consumer items, and other anti-inflationary measures were adopted in order to check the rise in the cost of living.^{2/} Formal wage ceilings were never established, but wage increases were discouraged. The government announced a policy of no further wage increases in its White Paper of July 1941, but the Trades

^{1/} A Record of British War Production, *op.cit.*, p. 1.

^{2/} British Government, British Information Services, Information Division, *Britain's War Economy*, British Information Services, Pamphlet I.D. 282, May 1943, pp. 2.

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Unions did not fully subscribe to it, and reserved the right to ask for increases where necessary. The National Arbitration Tribunal, a wartime agency whose decisions were legally binding, allowed many increases, but its decisions were based in general on the governmental policy of wage stabilization.^{1/}

Manpower

13. The outbreak of World War II found Britain in no better position with respect to far reaching plans for the utilization of manpower than the other democracies. The necessity for universal service was undoubtedly foreseen before the war, but no evidence has been found that detailed plans for such services were studied or prepared.

14. In the United Kingdom manpower policy was established by the War Cabinet, based upon plans submitted by its economic body, the Lord President's Committee. The policy thus enunciated was administered by the Ministry of Labor and National Service for both the armed forces and industry. The United Kingdom was divided into eleven Defense Regions based upon population. The Ministry of Labor and National Service had a Regional Controller in each Defense Region who was responsible for recruiting, training, transfer of labor, conditions of work, and the welfare of labor. Under the Regional Controllers, there were 44 District Manpower Boards, also based on population, who were responsible for deferments, district labor supply questions, and other matters affecting the individual. Each District Manpower Board consisted of a Chairman, a Labor Supply Officer, a Military Recruitment Officer, a Deferment Officer, and a Womanpower Officer. The District Manpower Boards had 400 Labor Supply Inspectors with engineering qualifications who assisted them in their duties. These Inspectors, through visits to industrial concerns, insured that the proportion of skilled labor was not greater than needed, and that demands for labor were not excessive. They rendered advice to the Boards on transfers of workers between plants, training arrangements, and the introduction of unskilled workers, including women, into factories. They also investigated alleged violations of the various Orders controlling manpower, and advised Boards on the release of individuals for the armed forces. Local Employment Exchanges were maintained by the Ministry of Labor throughout the country.^{2/}

15. On 26 May 1939, Parliament passed the Military Training Act. This measure provided for the registration, medical examination, and calling up for military service of 20 year old men. Since the outbreak of war occurred in September of that year, the registration of only one age class occurred under this act. On 3 September 1939, the first war-time manpower measure, the National Service (Armed Forces) Act, was enacted.

^{1/} Ibid., p. 3.

^{2/} British Government, British Information Services, Information Division, Control of Manpower in Britain, British Information Services, Pamphlet I.D. 313, March 1945, p. 9.

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This Act made all male British citizens in Great Britain aged 18 to 40 liable for military service. On 10 April 1941, the National Service Act extended this liability of men to service in the Civil Defense Force, comprised of the Police War Reserve, National Fire Service, and Civil Defense Reserve. The National Service (No. 2) Act of December 1941, raised the military age to 51, and made women liable for service in the Women's Auxiliary Service and in the Civil Defense Forces. Another National Service Act, 7 September 1942, reduced the age of registration to 17 years and 8 months, although the call up age for service remained at 18 years.^{1/}

16. The Emergency Powers (Defense) Act of 1939, as amended by the second act of 22 May 1940, gave the Ministry of Labor and National Service authority to deal with manpower for industry. Regulations made under this Act, gave the Ministry of Labor and National Service broad powers, including the power to direct any person to perform any service which that person was capable of performing; to transfer labor into and between vital war industries; to regulate the employment of workers and the duration of their employment; to enter and inspect premises; and to require any person in the United Kingdom to register particulars about himself. In addition, Defense Regulations of 1939, gave the Minister of Labor the power to direct men and women to enroll in the Civil Defense Forces, Royal Observer Corps, and the Special Constabulary, either whole or part time. Under the Defense (Home Guard) Regulations of 1940 and 1942, the Minister was given power to direct men to join the Home Guard.

17. Men and women were registered either for military service or for industrial employment. Registration of men and women for call up under the National Service Acts presented no particular problems. Women aged 19-30 were liable for service under these Acts. Where they did not express a preference they were normally enrolled in the Women's Military Services. They could elect Civil Defense work if they desired to or specified jobs in industry selected by the Ministry of Labor. Where doubt existed about the personal or domestic status of a woman, the case was referred to an independent Women's Advisory Panel attached to the Employment Exchange. If any person was unwilling to undertake the selected employment, he or she could be ordered to work by a National Service Officer. Although no statutory right of appeal against the order existed, the individual was normally permitted to appeal to an Appeals Board constituted under the Essential Work Orders.^{2/} In addition to men called up for the Armed Forces, men between the ages of 41 and 50 were registered, interviewed and directed where necessary to appropriate industrial work pending possible military service. Registration for industrial employment was accomplished under authority of the Registration for Employment Order, 1941. Placement was accomplished through a personal

^{1/} Control of Manpower in Britain, op.cit., p. 1.

^{2/} Ibid., pp. 12-14.

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interview with specially trained officers. Strict control over men of all ages working or desiring to work was exercised through:

a. Restriction on Engagement Order (May 1940), which required that employment in most war industries take place only through Employment Exchanges of the Ministry of Labor.

b. Essential Work Orders (April 1941) under which workers in essential industries could not leave their jobs or be dismissed, except for serious misconduct, without permission of the local representative of the Ministry of Labor.^{1/}

Women between the ages of 18 and 51 were registered under the Registration for Employment Order, 1941. All women except those already engaged in vital war work, and those with their own children under 14 living with them, were interviewed. Appropriate work was suggested and efforts made to persuade the woman to do the job. Power existed for forcing her to accept, but was rarely used. Women were controlled under the Essential Work Orders, and those from 18 through 40 were also controlled under the Employment of Women (Control of Engagement) Order, 1943, which prevented employment of women of this age group, except through the Employment Exchanges or other approved agency.^{2/}

18. Manpower placements and priorities were planned by the Ministry of Labor in consultation with the supply ministries and the Board of Trade. Priority directions were issued by the Ministry of Production in conjunction with the Ministry of Labor. Special labor priorities were worked out in bi-weekly meetings between representatives of the supply ministries and the Ministry of Labor.^{3/}

19. All boys and girls 16 and 17 years of age, were registered and interviewed through arrangements made with the Youth Service Committee of the Education Authorities. Those who were not already engaged in some form of training or national service were encouraged to join a voluntary organization such as the Boys' and Girls' Clubs, Young Farmers' Clubs, Guides, Scouts or Brigades, a Youth Center, or one of the Junior Service Organizations, such as the Air Training Corps, the Sea and Army Cadets, or the Home Guard. Boys who were physically fit were encouraged to take some form of pre-service training.^{4/}

20. Special Employment Exchanges were established to assist aliens, including refugees of enemy alien nationality, to enter essential war work. The International Labor Force Registration Order of 1941, covered all Belgian, Czech, French, Netherlands, Norwegian, Polish,

^{1/} Ibid., p. 3.

^{2/} Ibid., pp. 13 and 14.

^{3/} Ibid., pp. 10 and 11.

^{4/} Ibid., pp. 2 and 3.

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Austrian, German, and Italian nationals residing in Great Britain. As far as possible, workers were placed at work by national groups to prevent the feeling of isolation and other difficulties.1/

21. In order to affect a balance in manpower requirements between industry, the armed forces, and civil defense, a Schedule of Reserved Occupations was set up in January 1939. This Schedule fixed an age for each occupation and industry above which a worker was not normally to be conscripted or accepted as a volunteer in the military services or in civil defense. Men below these ages were normally called up by the armed forces. In addition, a system of deferment was applied to key men below the reservation age for their occupation, who were engaged in vital war production. The Schedule of Reserved Occupations did not apply to women, but women engaged in certain vital war work were not called up. In order to prevent important industries losing too many young workers, a Register of Protected Establishments was inaugurated in April 1941. Manufacturers engaged in essential war production could apply to be placed on this Register. Many occupations were then given two alternate ages of reservation — a young age for a worker in a "protected" establishment, and a higher age for the unprotected plants.2/

22. By 1942, the expansion of the armed forces caused the system of block reservations by occupation to be gradually replaced by a system of individual deferment. Each individual case of deferment was examined, and the importance of the war work being done by the individual became the criterion of his eligibility for deferment. This system, in addition to furnishing more men for the armed forces, facilitated the transfer of men with special skills to more essential work.3/

23. There has never been a general law limiting the hours of employment of all workers in Great Britain. Agreements between the Trades Unions and employers prior to the war generally set the working hours from 44 to 48 hours per week, depending upon the industry. The statutory restrictions on the employment of women and young people were generally relaxed after the beginning of the war. Supply departments authorized their contractors to work overtime up to a total of 60 hours per week. Following Dunkirk, the Minister of Supply ordered all Royal Ordnance Factories and private holders of defense contracts to work 24 hours per day, 7 days per week, and all holidays were cancelled or postponed. After two months, the ill effects of the 70 to 84 hour work week began to appear in the form of reduced efficiency, excessive fatigue, absenteeism and illness. Attempts were made to reduce the weekly hours of labor, but because of the labor shortage, long hours and Sunday work continued until the end of 1941. 4/ In May 1942, a 52 hour per week

1/ Ibid., p. 3.

2/ Ibid., p. 6.

3/ Ibid., pp. 6 and 7.

4/ Elliott, William Y., and Hall, H. Duncan, The British Commonwealth at War, Alfred A. Knopf, New York, 1943, pp. 238 and 242.

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schedule for manual labor and a 46 hour per week schedule for clerical labor was declared to be the minimum working week.^{1/} This schedule was adhered to fairly closely throughout the remainder of the war. In 1944, the average hours of work for men in industry was 54 hours.^{2/}

24. The Minister of Labor and National Service made a determined effort to gain the support of both labor and management. He formed a National Joint Advisory Council, composed of representatives of the Trades Union Congress General Council and the British Employers Confederation, at the outbreak of war, to advise him on matters affecting both labor and employers. Upon passage of the Second Emergency Powers Act in 1940, the Council appointed a Joint Consultative Committee to advise the Minister on further steps. By keeping this Committee fully informed of all proposed moves in the mobilization of manpower and by seeking advice from it on manpower problems, the mobilization of manpower proceeded smoothly and with a minimum of friction.

25. Collective bargaining was continued in Great Britain throughout the war. During the first year of the war, strikes continued at about their prewar rate. In order to eliminate the loss of work time due to labor disputes, a Conditions of Employment and National Arbitration Order was issued in July 1940. This Order prohibited strikes and lockouts, imposed union standards upon all employers whether or not they recognized trade unions, and established a five-man National Arbitration Tribunal for the settlement of disputes. Labor disputes were reported by either party to the dispute, to the Minister of Labor, who was required to use the existing collective bargaining machinery within industry for its settlement.^{3/} In the event that a solution was not reached through this means, or the case was unduly delayed, it was referred to the National Arbitration Tribunal. The Tribunal was allowed 14 days in which to make its decision. Any decision, agreement, or award arrived at by the Tribunal was binding upon the disputing parties, and penalties for violations were provided. Strikes continued throughout the war, but the number of workers involved, and the man days lost, were substantially lessened.^{4/5/}

Materials

26. One deficiency of the prewar planning of the United Kingdom for utilizing and controlling resources was that the British did not foresee nor appreciate the magnitude of the effort required to prosecute the war on the scale which subsequently developed. The British began

- 1/ Mendershausen, Horst, The Economics of War, Prentice Hall, Inc., New York, 1943, p. 188.
- 2/ A Record of British War Production, op.cit., p. 1.
- 3/ Elliott, William Y., and Hall, H. Duncan, op.cit., p. 243.
- 4/ A Record of British War Production, op.cit., p. 1.
- 5/ Elliott, William Y., and Hall, H. Duncan, op.cit., p. 243.

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the war under the erroneous impression that military requirements could be superimposed upon their peacetime productive effort.^{1/} Prior to the war a limited amount of stockpiling was accomplished by the government. Some wheat, oil and other materials were stockpiled during 1939, but their effect on war production was small.^{2/}

27. The determination of military requirements rested with the Army, Navy, and Air Force, and was based on the War Book plans referred to above. As the war progressed and the concept of a limited war effort gave way to that of total war, requirements were stepped up to those of maximum effort.

28. Imports were cut as much as they could be -- from 55 million tons a year before the war to 23 million tons in 1942. Food and animal feeding grains were cut over 10 million tons, to one half of the prewar level. Iron ore was cut through the use of home sources, by over 3 million tons per year; timber and wood pulp by over 9 million tons. There was a limit to these cuts. Prior to Lend-Lease, certain weapons had to be bought from the United States, and the war could not be fought without machine tools, oil, aluminum, copper, rubber, wool and steel in larger quantities than Britain could produce, and therefore imports had to continue.^{3/}

29. A much larger volume of goods had to be produced with a much smaller volume of imported materials. The weight of imports was cut down to 40 percent of the prewar figure. A substantial part of this decrease was obtained by savings in food and civilian consumption goods generally. Through larger domestic production and a curtailment of consumption of food, import requirements dropped to two thirds of prewar consumption. Much of the saving was obtained through curtailed use of certain other materials which could not be imported in sufficient quantity, the most important item of which was timber, and by increasing the production of raw materials within the United Kingdom.

30. Of all the munitions used by the armed forces of the British Commonwealth and the Empire, 70 percent were produced in the United Kingdom, and in addition, Britain produced and sent substantial quantities of supplies to the Allies. The bare figures for the increases in output cannot convey much, but a few figures on some of the largest items of production will serve to indicate the general picture:

^{1/} Industrial Mobilization in the United Kingdom, op.cit., pp. 1 and 14.

^{2/} Mendershausen, Horst, op.cit., p. 28.

^{3/} London Times, British War Production, op.cit., pp. 1 and 2.

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Item	Production per annum	
	Last quarter of 1939	Peak reached
Machine guns	29,200	104,800
Submachine guns	None	1,572,000
Tanks	1,200	8,600
Tanks (weight in tons)	8,844	208,140
Carriers and armored cars	2,500	24,400
Shells (millions)	7.8	59.4
Small arms ammunition (millions)	45	3,046
Major war vessels (tons)	89,000	346,000
Naval guns	1,760	20,970
Aircraft structure weight (millions of pounds)	45	223
Aero engines	18,100	63,300

31. The British early recognized the need for control over the various materials which were essential to the war economy. They exerted government controls over exports, imports, domestic production, utilization, allocation and storage of such materials. From the beginning the system of controls was based on allocations. In the government structure as finally evolved, the Ministry of Production coordinated the war industries through its Production Council, which decided what raw materials were to be used and for what purposes. The actual administration of materials control was spread among various government departments as follows:

- a. Ministry of Food - Foodstuffs and animal feeding stuffs.
- b. Ministry of Aircraft Production - Aluminum, bauxite and aircraft materials.
- c. Board of Trade - Non-consumer type goods.
- d. Ministry of Fuel and Power - Petroleum.^{1/}

32. The Ministry of Supply took charge of weapons and stores for the Army. From May 1940, the Ministry of Aircraft Production did the same for the Royal Air Force; and throughout the war the provision of ships and naval stores remained the responsibility of the two Controllers of the Admiralty -- one for the Navy and the other for merchant shipbuilding.^{2/}

33. Not only policy, but also administration was centralized. Conflicting claims were settled in the light of the general strategy of the war and the economic policy of the Cabinet. The supreme coordinating agency was the Ministry of Defense and the Defense Committee

^{1/} Industrial Mobilization in Great Britain, op.cit., p. 8.

^{2/} London Times, British War Production, op.cit., p. 2.

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of the Cabinet, whose duty it was to define the tasks of the production ministries in relation to the broad lines of war strategy. On the lower, day to day level, the programs and needs of individual supply departments were sorted out by various coordinating committees. In 1942, a Ministry of Production was established with the function of allocating industrial capacity (except shipyards) and materials, and coordinating and supervising the activities of the supply ministries. It was not a true supply department in that it never administered actual production or distribution of either raw materials or machine tools. It did not place orders for weapons and, except for its regional organization, it was not in direct contact with industry.^{1/}

34. This distribution of functions was neither simple nor rigid. For example, the Ministry of Supply filled orders for shells and ammunition for the Navy and Air Force as well as for the Army, and the Ministry of Aircraft Production for a time managed the production of radio tubes for all three services. In time, the Ministry of Supply and the other departments came to control the production of common items serving civilian needs as well as the armed forces.^{2/}

35. A single agency, the Raw Materials Division of the Ministry of Supply, controlled the procurement, production, importation and distribution of all critical raw materials. In the same way, machine tool production, distribution and import were supervised by the Machine Tool Control of the Ministry of Supply (later by the Machine Tool Division of the Ministry of Production working through the Machine Tool Department of the Ministry of Supply).^{3/}

36. There was great pressure at all times during the war for economy in the use and recovery of all scarce materials. Designs of munitions and production equipment always took into account the need for economizing to the utmost in the use of materials. Salvage drives, both in industrial plants and among the general public were pushed to great lengths with good results.^{4/}

Facilities

37. Prewar planning by the Committee of Imperial Defense did not consider preparation for total war in its entirety. A census of plants and machines had been made before the war, but industry was more or less left to act on its own initiative and best judgement. New plant construction before the war was devoted principally to expanding aircraft production. The early conversion of manufacturing facilities to war production was entirely voluntary, although industrialists were offered financial incentives to persuade them to accomplish conversion.^{5/}

^{1/} Ibid., p. 2.

^{2/} Ibid., p. 2.

^{3/} Ibid., pp. 1 and 2.

^{4/} Ibid., pp. 1 and 2.

^{5/} Elliott, William Y., and Hall, H. Duncan, op.cit., p. 171.

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38. In 1940 and 1941, time and resources were not available to permit the building of new war plants. Production had to be accomplished with facilities already in existence. Automobile manufacturers stripped their assembly lines, put their special tools and unwanted machines wherever they could find room, converted their plants, and within a remarkably short time, airplanes were being produced. Chair factories made aircraft fuselages, refrigerator plants made armored cars, knitting machinery gave way to machine guns, and printing presses to gun mounts and control gears. In general, the change-over was made in the same factory space, with the same staff and labor, and with a large proportion of the same equipment and tools, that had been previously used for the manufacture of civilian goods.^{1/}

39. Due to the absolute necessity for utilizing all workshops, however small, for war production, the government encouraged subcontracting and the formation of local and regional clearing houses for munitions orders. A system was developed of using thousands of very small firms as subcontractors to the prime contractors for war goods, who dealt directly with the government supply departments. Regional Defense Boards acted as clearing centers for work requiring machine tools.^{2/}

40. The two features of war production most desired were maximum possible output in the minimum possible time, coupled with security from attack. Search was made for relatively secure locations, and equipment and supplies which could lead to bottlenecks were dispersed. It was essential, because of the time factor, to utilize existing available plants, equipment, organization and labor to the fullest extent. New plants were for the most part built where resources were already available for their operation.^{3/} Only a small portion of war production was accomplished in government operated arsenals. Most plants were privately operated and a large proportion privately financed. Although private financing of plants was encouraged, many cases arose in which the government was forced to finance the plant expansion. Title to the property was retained by the government, but the plant was operated by the private manufacturer.^{4/}

41. Reserve financial and material resources of Great Britain were necessarily used for essential extension of facilities which civilian factories could not provide, and for the new building required for dispersion of vital plants due to the danger of heavy air attacks. Many shell filling plants were built by the government, as were a large number of small plants for the manufacture of aircraft components and for airplane

^{1/} London Times, British War Production, op.cit., pp. 1 and 2.

^{2/} Mendershausen, Horst, op.cit., p. 119.

^{3/} London Times, British War Production, op.cit., pp. 1 and 2.

^{4/} Mendershausen, Horst, op.cit., pp. 122-125.

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assembly. A number of small dispersed alloy steel works were constructed due to the danger in the great concentration of existing industry at Sheffield. Generally, the primary effort was directed toward the conversion of existing plants and facilities. The intensity of air attacks caused the establishment of a policy of avoiding concentration of the production of any war product or component thereof in any one place.1/

42. By the end of the war, the various ministries with jurisdiction over manufacturing facilities had perfected their administrative procedures, and the utilization of existing facilities was good. Steps had been taken to coordinate the procurement of the three services. Underground facilities had been built and were in full production. Consumers goods industries had been consolidated and their products standardized to effect production economies and reduce needless minor brand variations. The facilities released through these measures were used in war production or for storage purposes. Britain never reached the point where she had all the plant facilities she thought necessary or desirable, but with the assistance of her allies, the most essential requirements were met.

43. The government assumed centralized control over the railroads, but little change was made in the management. A central managing board, composed of the general manager of each of the larger roads, was formed under the chairmanship of the president of the Board of Trade. The government maintained the net income of the railroads at the same level in effect during the normal period just prior to the war. The railroads expedited all military traffic and handled all government traffic free of charge.2/

B. Germany.

1. | The economic mobilization of Germany for World War II, started with the accession of the Nazi Party to power in 1933. Hitler hoped to realize Germany's ascendancy over Europe merely by skillful diplomacy, with armed conflict as a last resort. This strategy was guided by the basic assumptions that the world at large abhorred war; and that the nations were so divided politically and psychologically, among and within themselves, that their ability to intervene with decision or strength would be reduced or delayed. Hitler's grand strategy was to take full advantage of a world beset by the evils of an economic depression, political suspicion and hatred for war, by resorting to a policy of division and subjugation by Blitzkrieg warfare. It should be emphasized that the Nazis did not plan to fight a prolonged war against a combination of major powers.3/ The time factor was the original secret

1/ London Times, British War Production, op.cit., pp. 1 and 2.

2/ Mendershausen, Horst, op.cit., pp. 77 and 78.

3/ Galbraith, Kenneth J., Industrial Mobilization of Germany, Lecture at The Industrial College of The Armed Forces, 18 March, 1947.

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weapon by which Hitler hoped to maintain his initial superiority. He planned to grow stronger by gaining additional manpower, facilities, and essential resources, through skillful political methods or military might, while his potential enemies were starting to mobilize. These strategic factors served as the basic pattern upon which Germany planned her economic mobilization.1/

2. In order to place the German economy on a war basis, full employment was achieved by the institution of public works projects and the placement of large orders for munitions. This resulted in increased output in existing industries and the construction of new facilities, particularly those in the field of synthetics. The latter, together with lightning thrusts to acquire the Ukrainian wheatfields, the Donets Basin coal and iron, and Baku oil, was the pattern of events which was to make Germany self-sufficient. "Armament in width," coupled with timely exploitation of weaker countries, was Hitler's principal intuitive theory for economic mobilization.2/

3. In order to bring out the important features of this theory, it will be necessary to survey the methods of implementation and examine the changes required by the events of war. Highlights of over-all Government plans and policies, and controls over manpower, material and facilities will be examined, together with the results obtained and the weaknesses which were either inherent or developed in the course of the war.

Organization, Controls and Over-all Plans and Policies

4. No Economic Mobilization Plan, in the sense of an orderly blueprint for organization and control of Germany's war potential, ever existed. The nearest semblance to any advance plans, theories or grandiose blueprints for the preparation and waging of war, is found in the crudely written and ferocious passages of Mein Kampf. Without belittling its implications or warning to the world, it was nevertheless a poor excuse for a comprehensive and full worked out plan. It may be considered as the germ of a plan which, fertilized by the "Junkers," the industrial barony of combines and cartels, the famous "Institute fur Geopolitik," and "Institute for World Economics," and cultivated by Nazi domination, resulted in a series of Hitler decrees. These decrees were more haphazard and disjointed than systematic, but they were followed with characteristic German thoroughness and obedience.

1/ War Department, Strategic Bombing Survey, Overall Economic Effects Division, The Effects of Strategic Bombing on the German War Economy, 31 October 1945, Washington, Government Printing Office, 1945, p. 15.

2/ Ibid., p. 19.

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In this fashion did the theories, promises and slogans of Hitler develop into near total economic mobilization.1//

5. The concept of a "general plan," as it finally evolved, was based on the following:2/

- a. Fusion of the Hohenzollern bureaucracies (The military, the Junker landed aristocracy, industry, commerce, finance, and civil service) with the Nazi Party.
- b. Militarization of peacetime social-economic relationships.
- c. Fusion of business and government.
- d. The "master-race."

6. It may be considered that the Nazi "War Economy" developed in three phases. In the first phase (1933-1935), the unemployment problem was largely solved by the construction of public works and the manufacture of munitions; all elements of Nazi opposition were eliminated; the "estate" theory was implemented; trade unions were abolished; and organizations were set up for the regimentation of agriculture, labor, youth, women, and business in general, together with the abolition of former parliamentary system and existing democratic rights. This economy was called the "Wehwirtschaft." The "stande" or "estate system" consisted of four major divisions of the whole economy; the National Food Estate, the Estate of Industry and Commerce, the Labor Front, and the National Chamber of Culture. The policy and coordinating agency of "estates" was the "National Economic Chamber" which was responsible directly to the Economic Ministry, the head of which was appointed by Hitler. The principles which controlled the organization under the National Economic Chamber may be summarized as follows: compliance with decisions of higher authority was compulsory; appointments and authority came from the top down, while responsibility channelled from bottom to top; each trade and functional body represented a system of "self-government in business" responsible through the chain of command.3/

7. This first phase brought about an elaborate and extensive system for the enforcement of totalitarian economic policies. The objectives were rearmament and militarization in nature. Controls were set into operation in a piece-meal fashion. The Nazis acted on a "control-as-you-go" basis, dictating new plans as new emergencies became apparent.

1/ Hamburger, Ludwig, How Nazi Germany Has Controlled Business, Washington, The Brookings Institute, 1943, pp. 12 and 13.

2/ Steiner, op.cit., pp. 4-1, 4-2.

3/ Steiner, op.cit., pp. 4-3, 4-4, 4-5.

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Some of these were an adaptation of previous study and research, while others were improvised to suit the current situation. To augment the agencies already existing in 1933, others were established and expanded as the opportunity and need arose. Step-by-step action, rather than deliberate control, resulted in an increasing number of boards, offices, and commissioners to regulate private enterprise.^{1/} Dr. Schacht, Chief of the Ministry of Economics, through a series of decrees, provided the foundation for a system of price-control and import, export, credit and financial controls.^{2/}

8. The second phase (1935-1939) was a program for the coordination and expansion of controls. In September 1936, Hitler announced that the "first Four Year Plan" was completed. This was a blueprint only in retrospect, never having existed in fact.^{3/} The so-called "second Four Year Plan" was instituted with the primary objective of obtaining "autarchy" or self-sufficiency, and consisted of a variety of slogans and measures to expand and speed up militarization for the expected limited war. The theory of sudden thrusts, with quick victories, followed by consolidation of conquered resources before further aggression, was the concept upon which all decrees were enacted.

9. The first step toward coordination was the merger in 1933, of the old Reichs Ministry of Economy and the Reichsbank. The basic economic policies were integrated, but due to the complexity of the numerous agencies, coordination was only partial. As an example, production, importation, distribution and pricing of farm products were regulated by the Ministry of Agriculture, while wages and national employment were controlled by the Ministry of Labor. Subsidiary agencies of the Nazi Party initiated policies of their own which conflicted with established government controls. No basis of over-all coordination was achieved until Goering was appointed in October 1936, to control the entire economic life of the country. Dr. Funk succeeded Schacht as Chief of the Ministry of Economics in 1937. In December 1938, Funk was delegated full authority over production. While Goering usually concentrated on laying down broad policies, and delegated authority to various commissioners to control crucial issues of the second Four Year Plan, he often encroached on lower echelon prerogatives and created confusion in many instances. In spite of this haphazard approach, Germany emerged in 1939, with sufficient coordination and adequate machinery to effectively harness every phase of the German economy to war effort. Thus an over-all mobilization plan was evolved by trial and error procedures over a period of six years. A comparatively smooth operation was achieved through pressure and fear, and the extreme loyalty of the Gestapo. It appears that the success of such a plan, which existed only in retrospect, was possible only in view of the fact that there was little opposition by Hitler's subjects.

^{1/} Hamburger, op.cit., p. 13.

^{2/} Steiner, op.cit., pp. 4-9.

^{3/} op.cit., p. 12.

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10. The third phase (1939-1942) started with the outbreak of war and the creation of the Ministerial Council of Defense, a supreme body under Goering, for the coordination of all phases of the war effort. It included personal representatives of Hitler and the Chief of Staff of the Armed Forces. In 1940, Hitler appointed Todt, Minister for Arms and Ammunition, to increase the output of munitions. He was given sweeping authority which subordinated the Minister of Economics.

11. The German war economy worked according to expectations until the defeat before Stalingrad. The cut back in production ordered by Hitler in 1941, and the entry of the United States into the war, caused the German leaders, for the first time, to face the prospect of a prolonged war. Although the German leaders called for an all-out war effort, "total mobilization" as measured by the relative standards of other belligerents fell short of the maximum effort attainable. In February 1942, Speer was appointed Minister of Armament Production with very wide powers. This provided a Goering-Speer-Funk combination with somewhat loose coordination, but effective control. By Hitler's decree on 2 September 1942, Speer was given full control over production and became the virtual dictator of the German war economy.1/

12. Speer reorganized controls by a system of "Rings" and "Committees." The "Speer period" saw spurts of production, largely through implementing earlier plans and the changed attitude of the people toward total warfare. Although a peak in production was reached in July 1944, the German output with existing facilities could not withstand a war of attrition, and this led to the eventual complete breakdown of the German economy.2/

Manpower

13. Prior to the Nazi regime, German labor had made tremendous strides in the right to participate in decisions which affected the welfare of workers. In the labor courts and the social insurance institutions, representatives of labor played an important part. In fact, in almost every phase of labor-management relations, representatives of organized labor shared responsibilities equally with representatives of employers.

14. As soon as the Nazis seized control, they wiped out every semblance of independent collective action by labor. Labor representation was eliminated, trade unions were destroyed, and the right to strike was abolished. Collective bargaining and the vast machinery for settling labor disputes were discontinued. As a substitute for the trade unions

1/ Office of Strategic Services, Speer's Appointment as Dictator of the German Economy, 13 September 1943, Washington, D. C., Office of Strategic Services, September 1943, p. 1.

2/ War Department Strategic Bombing Survey, op.cit., p. 7.

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the Nazis imposed the German Labor Front, a party dominated organization of all the men and women in the country who performed "human labor," employers and employees alike.^{1/}

15. The history of all of the various German control agencies is too complex for detailed discussion in this report. The ultimate control of German manpower was vested primarily in three top organizations: The German Labor Front; the Commissioner General for the Mobilization of Labor, in the Office of the Four Year Plan; and the Ministry of Armament and War Production. The Ministries of Labor, Agriculture, Economics and Justice must also be included, inasmuch as they also played a part in putting German labor on a wartime footing.^{2/} A brief discussion of the three top organizations and the part they played in the development of German manpower controls follows. The other agencies will not be discussed in detail, inasmuch as they played a relatively minor role.

16. The German Labor Front, headed by Dr. Ley, was formed by the Nazi Party in 1933. Membership in the Labor Front was compulsory for both workers and employers. The Front's task was not the determination of wages, hours, etc., but:

- a. Political propaganda.
- b. Organization of vacation activities (Strength through Joy, Beauty in Work.)
- c. Elimination of petty grievances in individual enterprises.^{3/}

The German Labor Front is most important when considered from its social aspects. While it was ostensibly an organization covering both employers and employees, it is fairly clear that in operation it was essentially a workers' organization dominated by the Nazi Party. The Labor Front, except in its inept effort at entrepreneurial activities and its excessively harsh dealing with any recalcitrance, was a considerable factor in the general satisfaction of labor with its role in the war.^{4/}

- 1/ Nathan, Otto, The Nazi Economic System, Durham, N.C., Duke University Press, 1944, p. 171.
- 2/ U.S. Industrial College of The Armed Forces, Report of Committee on Foreign Resources, World War II Industrial Mobilization Planning and Policies of Germany, United Kingdom, Union of Soviet Socialist Republics and Japan, June 1946, p. 3.
- 3/ Sargent, Noel, Economic Aspects of War Operation, Hempstead, N. Y., Hofstra College, 15 May 1940, p. 62.
- 4/ Graham, Frank D., and Scanlon, J. J., Lt. Col., USA, Economic Preparation and Conduct of War under the Nazi Regime, Washington, D. C., Historical Division, War Department Special Staff, 10 April 1946, p. 36.

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17. In 1942, Fritz Sauckel was appointed by Goering as Commissioner General for the Mobilization of Labor. Sauckel worked under the office of the Four Year Plan and was, in effect, the over-all administrator of labor, covering such problems as utilization, wages, allocations and recruiting. In addition, all German employment offices, and the trustees for labor were under his jurisdiction. A year after Sauckel's appointment, Albert Speer was appointed Minister for Armament and War Production. Here began a struggle between the two agencies which was never satisfactorily solved and which proved to be a definite weakness in the over-all German manpower program. Speer believed that he should have control over the distribution and utilization of labor in order to best obtain the highest degree of production. Sauckel was jealous of his empire, and as a result, the two agencies duplicated each other's functions, causing much confusion and many delays.

18. Germany, with its limited population, had to resort to many novel labor control practices in order to best utilize her existing manpower. As related earlier in this report, Germany entered the war under several false premises, the most important of which, as regards manpower, was the assumption that only partial economic and military mobilization would be needed, inasmuch as the war would be short and against a limited enemy. Some of the controls utilized by the Germans will be outlined later in the report, but first an analysis will be made of the prewar and wartime employment situation.

19. From Hitler's accession to power to the outbreak of war in 1939, the total labor force (including the Wehrmacht) had risen from 27.3 to 40.8 millions, resulting from four distinct causes: German territorial expansion had brought about 5.2 million workers into the Reich; normal population growth within the Old Reich had added one million workers; expansionist economic policies at home had put five million unemployed into jobs; and economic expansion, coupled with a variety of direct and indirect pressures, had led to the absorption into the labor force of a further 2.3 million persons who had not previously been in the labor market. In the proportion of the potential labor force that was actually employed, Germany exceeded both the United States and Great Britain.^{1/} In the final all-out effort of the Germans, the labor force (including foreigners and armed forces) rose to 45.2 millions as of 31 May 1944.

20. In the matter of labor controls, Germany had a long lead over the Allies because of their preparations prior to the advent of war. With the rise of the Nazis to power, the trade unions in Germany were abolished in 1933, and the Labor Front was substituted. The German race as a whole had been prepared for active belligerency. By 1937, industry rules fixing working conditions in all important industries, had been prescribed. Further controls were adopted so that by 1939, the Nazi "order" in the

^{1/} War Department, U. S. Strategic Bombing Survey, op.cit., p. 29.

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field of manpower was so well adapted to the exigencies of a war economy that relatively few changes had to be made.

21. Two of the more important controls utilized by the Nazis were: the Employment Exchange System; and Employment Books. The Exchange System had been developed after World War I, for the purpose of pooling and disseminating labor information so that areas could be screened for workers or for jobs. The Nazis took over the system, but used it as a means to regiment the distribution of labor. Through this means, they gradually achieved complete power over placement of workers. The Employment Book (Arbeitsbuch) was introduced in 1935, and played the same role as a draft registration certificate in a military conscription system. Under this law, every employable person in Germany who had completed his compulsory school education (usually by the age of fourteen) was required to register with an employment office, which kept a complete file on him and his movements. This system proved exceedingly valuable in the mobilization and regulation of manpower during the war.

22. In 1938, a decree provided for compulsory registration of all Germans, regardless of sex or age, for work of national importance. Actual conscription of labor was held to an absolute minimum during the early years of war, increasing in tempo until 1944, when wholesale conscription became the order of the day. Youth training, by decree, became an important factor in the Nazi system. It has been estimated that by the end of the war, there were approximately 6,000,000 youths between the ages of 14 and 17 in the German labor pool. Decrees were issued, restricting the turnover of labor in Germany, but this became an increasing problem with an average labor turnover of about one million workers each month. Numerous regulations were issued to adjust wages and hours to wartime conditions. Wages were theoretically stabilized in 1939, but in reality, they increased about 10 percent in the following two years, due to the granting of bonuses and awards. The average working hours throughout Germany, rose to a minimum 54-hour week and a maximum 60-hour week.

Materials

23. Requirements (both civilian and military), allocation, priorities, scheduling, production and distribution were regulated through a complex system of functional and regional organizations which had the "estate" (stande) as a framework. The Estate of Industry and Commerce, which contributed most directly to the war effort, will be outlined briefly as an introduction to the methods by which materials were controlled.

24. The supreme body of the stande was the National Economic Chamber which in turn was directly responsible to the Economic Ministry. This national chamber was divided into six major divisions: Industry; Commerce; Banking; Insurance; Public Utilities; and Handicrafts. Each of these in turn was divided into trade groups. The system was organized both functionally and regionally. Functionally, it followed industry

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grouping from the national level to the district and local areas. The regional system was designed to coordinate all the groups within each of fourteen major economic districts. This system, known as "self-government in business," created semi-autonomous groups in private industry which were vested with certain powers and delegated duties.^{1/} The national group, Industry, was divided into seven trade groups: Mining and metallurgy; machine manufacture and construction; iron and metalware; building and building materials; chemicals; paper and printing; textiles and clothing; food and drink.^{2/} Under the "Speer reform," control was decentralized through "rings" and "committees" by which the stande organization remained basically the same, but was guided by National Commissioners, National Boards, and National Associations, who in turn supervised "steering spheres."

Based on the volume of raw materials available, the civilian and military requirements were worked out by the National Boards and Commissioners and confirmed through the Ministry for Armaments and War Production. This Ministry was finally authorized, on 1 November 1943, to supervise and regulate all traffic in goods, including control of their acquisition, distribution, storage, sale, consumption and production.^{3/}

25. In summary, after trial and error improvisation, the system of raw material controls as it finally evolved, was based on the principle of balancing allocation with production, from the raw material stage through manufacture to consumption, including the required tools, machinery, construction, warehousing, packaging and shipment. This method indirectly controlled consumption of civilian goods, limited non-essentials and gave priority to military needs. The sum total of all controls relating to a given end-product constituted a "steering sphere."^{4/}

26. Steel, the controlling material in any war economy, is selected to illustrate the controls used. The basic principle was that of "double-bookkeeping" by the National Boards or National Commissioners which through "steering spheres" had the producers collectively plan and schedule production, while the consumers collectively distributed the material.

27. The German system was called "kontingent" or Quota System. Each collective consumer, such as the building industry, was a "Chief

^{1/} Steiner, op.cit., pp. 4-4, 4-5.

^{2/} Executive Office of the President, National Resources Planning Board, National Planning in Selected Countries, August 1941, Washington, D. C., Government Printing Office, 1941, p. 73.

^{3/} Office of Strategic Services, Research and Analysis Branch, Control over Distribution of Industrial Materials and Products in Germany, 12 July 1944, Washington, D. C., Office of Strategic Services, July 1944, pp. 1 and 2.

^{4/} Office of Strategic Services, op.cit., p. 4.

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Quota Bearer," who was the responsible administrator for the government in private industry. Under the Chief Quota Bearer, were Sub-Quota Bearers and so on down to the sub-subcontractors in a local district. This echelonnement of responsibility channelled down through the "estate" framework, all controlled by a "steering sphere," with the National Boards etc. directly under Speer at the top echelon.

28. To head up the steel program, the Steel Strategy Board was created, composed of members of the steel producing and steel consuming industries. This board decided the basic steel quotas which were statistical units on a tonnage basis -- no stockpiles being maintained by the quota bearers. A fine breakdown of quotas permitted shifting of material from project to project as the circumstance required. In addition to basic quotas, special quotas were assigned for urgent war contracts.

29. A claimant firm having a war contract submitted his order for steel directly to the producer. The Quota Bearer examined the order for specifications and quantity and, assisted by a special staff, took measures to simplify or reduce the order to conserve raw materials, and then passed the request on to the Chief Quota Bearer. If steel was available to the Chief Quota Bearer, based on allotment, the request was approved and the producer supplied the material. A permanent balance between production and requirements was fundamental in the budgeting system of allocation, but the flexibility of the method was responsible for its success. Each Quota Bearer had a full and complete picture of the material required by his industry, and was responsible for his allotted quantity. Through this delegated authority, each bearer was required to keep in touch with competent military authorities, transportation facilities and local economic councils, which were established throughout Germany, to enable equitable and efficient distribution of contracts to firms within his district.^{1/} A system of symbols and numbers gave statistical control over allocation and distribution. When a steel firm received a steel order from a Chief Quota Bearer, it forwarded the record to the Chief Association of the Steel Industry. At this point, the total amounts of steel requested by all industry, were compiled daily. The steel industry could, in this manner, balance requirements against supply on a day to day basis.

Facilities

30. The same misconception of the Germans concerning the length of the war and its vast requirements which affected manpower control also affected their planning to expand facilities. The Germans made no pretense of converting their normal economy to a full war economy. All their preparations were based on their concept of a limited short war, and when the war reached global dimensions, they were too late to expand their facilities to meet the new situation. [

^{1/} Army Service Forces, Industrial Information Unit, op.cit., pp. 3-5.

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31. Many examples point to the German weakness along these lines. There was, for instance, not even a calculation of the maximum number of combat troops that Germany could hope to put and keep in the field; few shadow factories, ready to be put in operation when war broke out, were planned or constructed; and no special attempt, with the possible exception of aircraft, was made to promote specialization for export in armament rather than in other industries.^{1/} ↗

32. In order to establish control over the productive capacity of Germany's industrial plant, the Nazis used mainly their power over credit and investment. As the military program developed and government control deepened over the economy of the country, the money and banking mechanism lost its position as the nerve center of a capitalistic community. Money and capital markets all but disappeared; credit institutions were shown of much of their power. Interest rates, funds available for short and long term loans, allocation of funds -- all phases of the financial market became subject to official manipulation. /

33. It is significant that the military men who shared in the direction of the war economy and the Four Year Plan, although favoring strict control of industry in national defense, disapproved of the anti-capitalist campaigns and declared themselves unmistakably against all nationalization. For example, Colonel Thomas, head of the War Economy Department of the Ministry of War, declared: "The execution is left as far as possible to private initiative. The German war economy will not socialize war industryThe entrepreneur and the merchant should make money. That is what they are for."^{2/}

34. When war broke out, the Nazis needed only to readjust and tighten their control measures. A Council for National Defense, headed by Goering, was established in August 1939, and granted sweeping power to coordinate business efforts. In order to increase the capacity of war industries and convert other factories for the production of war material, the National Service Law was initiated in September 1939. This law gave the government authority to conscript plants and raw materials needed for the defense effort, but it contained the provision that the business concerns affected should receive a "reasonable" return. Another decree gave the Ministry of Economic Affairs the power to require industries to combine for the purpose of increasing efficiency, pooling patents, erecting new plants and promoting exports. Sharp curtailment of civilian consumption and shifts of industrial demand created by war inevitably bring losses and hardships. By decree, the Nazis alleviated this burden on the industries undergoing losses by distributing the cost of closing enterprises on the concerns which remained in business. In addition, the government distributed its orders among as many factories as possible, particularly in the depressed industries.

^{1/} Graham & Scanlon, *op.cit.*, p. 13.

^{2/} Sweezy, Maxine Y., The Structure of the Nazi Economy, Cambridge, Massachusetts, Harvard University Press, 1941, pp. 50 and 51.

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35. Thus, in their attempt to control the productive capacity of the nation, the Nazis passed through several stages of varying degrees of control. The Nazis transformed the already highly organized entrepreneurial economy only in so far as it was imperative to consolidate the political power of the party.^{1/} During the first period, there was no central bureaucracy to run business, and controls were fairly elastic. In the second period, when armaments were tremendously accelerated, the channels of production were controlled by a priority system. When war actually came, the controls were expanded and tightened, especially in vital industries, in order to insure the most efficient production for war. Risks in business were practically eliminated with the assurance of a market for products, so that the industry operator confined himself to the organization and technical problems within his own plant. Expansion of business, founding of new firms and the introduction of new products were all determined by the interests of the war program.)

C. Soviet Russia.

Planning

1. The author of "Total War" must have had Soviet Russia in mind when he wrote the lines quoted below, for they appear to apply to that country's economic mobilization in World War II, more than to any other power engaged.

"In order to mobilize the full economic power of the nation and to use it most effectively for victory, it is necessary to establish complete control over every productive unit and every producer Regimentation of industry is the essential foundation for efficient industrial mobilization In a war economy production should be controlled by a single comprehensive economic plan covering all industries and every stage of production Military power is today little more than a consequence of industrial development and industrial mobilization War has become economic and totalitarian. It is a conflict between national economies. Modern wars are won by munitions plants and airplane factories even more than by armies and navies The techniques of industrial mobilization are probably more important than military strategy. A well organized war economy can endure a tremendous waste resulting from poor military strategy, but a poorly organized war economy may break when brilliant military strategy is about to bring victory. A smoothly and efficiently running war economy cannot, of course, be created overnight. Thorough-going industrial mobilization requires

^{1/} Ibid., p. 54.

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considerably more time than military mobilization and must therefore be planned for well in advance."^{1/}

Whether or not these concepts of total war describe exactly the economic mobilization achieved by Soviet Russia, it is important to emphasize that that country understood totalitarian warfare; that it was prepared to continue fighting despite terrific economic and military losses; and that the planning and execution of its economic mobilization was successful.

2. How was a country which had been so backward under the Tsarist regime, and which had to surrender ignominiously to the Germans early in 1918, able to regain its power to wage war in the space of twenty-five years? The following quotation is enlightening:

"Every incident of the Soviet Union's history, every item of its social program, every change in its political form, and every enterprise under its industrial Five Year Plans is related to its state of war during the last twenty-five years."^{2/}

Obviously, Russia had not been engaged in wars of arms during that entire period, but its internal struggles against the enemies of Communism, its industrial revolution and its determination to fortify the country against aggression resulted in a state of readiness or emergency, even in the non-war years.

3. The trend toward the limitation or elimination of private economy and the organization of a state-owned, planned economy, set in at the beginning of the Russian revolution. It was stimulated by the necessity of finding a way out of the state of economic ruin, into which Russia had lapsed after the Revolution. Because of the economic and political conditions prevailing during the first years of Soviet rule, industry, commerce, banks, and transportation were in a near chaotic condition. The initial attempts at a planned regulation of the nation's economic life had modest, limited objectives, and were mostly those dealing with the removal of such obstacles as prevented the normal functioning of such enterprises as food supply, transportation, and manufacturing.

4. Following the death of Lenin in 1924, the struggle for control of the Communist Party, ended with a complete victory for Stalin. This served to solidify the economic aims of the government. By 1928, the work of the "Gosplan" (State Planning Board), which had been organized

^{1/} Burnham, John, Total War, Meador Publishing Company, Boston, Massachusetts, 1943, pp. 14-24.

^{2/} Edelman, Maurice, How Russia Prepared, Penguin Books, Inc., New York, 1942, p. 10.

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since 1921, was ready for adoption and execution by the government. Yugow aptly summarizes the framework on which the government planned economy developed:

"By 1928, the planning bodies of the USSR had conceived a long-range plan which would be not for just a single year, but should look five years ahead, since only such a comparatively long span of time could embrace plans for new construction of plants, railroads, electric power stations, etc. The Gosplan and its subcommittees first drew up drafts of five-year plans for industry, agriculture, transportation, and other branches of economy, and only after that, tackled the preparation of a master plan for the entire country. The First Five Year Plan became the supreme economic law in 1929, and was binding on all government bodies of the Union. Although it was not entirely fulfilled, it was considered to have been completed by the end of 1932. The Second Five Year Plan set the quota for the period 1933-1937, and the Third, which began in 1938, was scheduled for completion by 1942."^{1/}

5. The Gosplan (which includes the planning bodies of the constituent republics, local governments, and separate industries,) under the supervision and guidance of the Central Committee of the Communist Party, issued basic directives for the preparation of the plan. The local and industrial planning boards, on the basis of these directives, prepared drafts of plans for enterprises, industries, and regions, based on their maximum potentialities. The Gosplan, to which all these drafts were sent, prepared a general plan for the national economy. After the plan was approved by the highest government and party institutions, the Gosplan promulgated the plans which then became binding on the Union, the constituent republics, and the local governments.^{2/}

6. During the period of the New Economic Policy (1921-1928) and in the early years of the Plans, the aid rendered by foreigners was of incalculable assistance to Russia's industrial revolution. At the same time, the differences between the political and the economic views of foreign countries was remarkable. The United States shrank from recognizing Red Russia, and England met Soviet propaganda with a determined prohibition.^{3/} Foreign aid was not restricted to the USA and UK alone, even though the USSR showed a marked preference for US help. About 1930, it was estimated that there were "no less than a thousand American engineers and perhaps another thousand made up of German, Swiss, Belgian and Scandinavian, directing industrial enterprises in the U.S.S.R." One American engineering firm was chief consultant for

^{1/} Yugow, Ibid., pp. 4 and 10.

^{2/} Yugow, op.cit., p. 232.

^{3/} Von Ehardt, op.cit., p. 10.

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the building of the Dnieper dam and electrical station, and another supplied consultants for the Donetz coal enterprise. Another American firm projected the construction of a steel plant in Siberia.^{1/} Other significant assistance included: German as well as American aid to Russia's struggling Aircraft industry; American aid to the tractor industry which resulted in production of Fordson and Caterpillar types; and British aid in producing machine tools and bicycles. Of the last, the 10,000,000 Anglo-Soviet Financial Credit Agreement of 1936, was a most important aid to Russia's machine tool industry. Of interest is the statement: "Both British and American machine tool manufacturers have a specialized experience of Russian requirements, sufficiently recent to make supplies under Lend-Lease a simple extension of previous contracts."^{2/}

7. The economic aims of the USSR became more refined and more directly applicable to industrial mobilization for war with the advent of the Third Five Year Plan (1938-1942). The more important features of this plan were:^{3/}

- a. An accelerated rate of industrial development, particularly in heavy industry.
- b. Increased responsibilities for executives in order to increase output and reduce cost of production.
- c. Expansion of railway equipment and other facilities for transportation and communication.
- d. A one hundred percent increase in investment in capital construction.
- e. The prohibition of construction of new plants in the Moscow and Leningrad areas and similar concentrated industrial centers.
- f. The development of the Far East and Volga region.
- g. The discouragement of the 'megomania' of construction by building small and medium industrial plants in all branches of the national economy with particular emphasis on electrical power stations.

^{1/} Chamberlain, William H., Soviet Russia, Little, Brown and Company, Boston, Massachusetts, 1931, pp. 354-365.

^{2/} Edelman, op.cit., pp. 42-45.

^{3/} Molotov, V., The Third Five Year Plan for the National Economic Development of the USSR, Foreign Languages Publishing House, Moscow, 1939, pp. 1-15.

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8. The basic aim of the Third Five Year Plan was to raise the per capita output of industry to the levels achieved by the most highly developed capitalist countries.^{1/} Although not mentioned in the plan, leap frog methods were developed for the rapid evacuation of industries which might be lost by enemy invasion. The equipment of many light industries in Russia proper was installed in such a way as to be readily removable. New locations were determined and structures erected for this particular purpose. Naturally, these new locations were mostly east of the Urals. At the same time, "with considerable foresight, the Soviet government kept its German engineers west of the Urals."^{2/}

9. The structure of Soviet industry may be considered as four-fold: first, the large all-Union or Federal plants called "census" industries; second, the Republican industries, whose operations are confined to the republics in which they are situated; third, the local industries, which may also include collective industries, which vary greatly in kind but are important to the economy, ^{3/} and fourth, though not usually considered as an industry, the system of collective farms throughout the USSR which are the basis for its national economy and the direct source of much of its income, its raw materials and its manpower.

Manpower

10. In evaluating the mobilization of manpower in Russia, the aim and promise of communism is significant. The Soviet government, before the war, maintained that it had established a Socialist system by which each was awarded according to his work. After the Third Five Year Plan ended in 1942, the trend was a transition to a Communist form, in which each would receive according to his needs.^{4/} The Soviet government, by its incentives in reward for work, and by its promises of better things to come, made the Russian worker the most potent force in the Soviet Union. The ability of the Soviet government to inspire in its people the desire to do a certain job, is the first and foremost lesson to be learned from the economic mobilization of the USSR in World War II.^{5/}

11. The manpower of the Soviet Union was drawn from a population which was estimated in 1943, to be 193 million. This conglomerate people embraced 189 races who spoke 150 different languages, and embraced 40

^{1/} Salisbury, Harrison, Russia on the Way, MacMillan Company, New York, 1946, pp. 311-315.

^{2/} Edelman, op.cit., pp. 42, 55, 60.

^{3/} Ropes, Ernest C., Industrial Mobilization in Russia, Lecture, The Industrial College of The Armed Forces, April 23, 1946, pp. 1 and 2.

^{4/} Yugow, op.cit., p. 244.

^{5/} Ropes, Ernest C., Chief, USSR, Section, Office of International Trade, Department of Commerce, Interview, 1 April 1947.

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different religions. This population was located in a Federation of 16 Union Republics and many autonomous republics, autonomous regions and administrative districts.1/2/

12. How the manpower of this immense and conglomerate population was mobilized, is best understood in terms of the individual Russian. What the average worker, farmer, and soldier had achieved for himself through the Bolshevik Revolution, and what it had given him to fight for, has been summarized by the following extracted quotations:

- a. "The 250,000 collective farms equipped with modern machinery and power, in which all members have a stake and share."
- b. "The practical disappearance of racial and national antagonism among Jews, Russians, Tartars, Armenians, and 185 other peoples now enjoying equal rights and privileges."
- c. "An ever-expanding economy, creating a ceaseless demand for more and more technicians, foremen, engineers, chemists, architects, teachers, journalists, and physicians."
- d. "The extensive system of schools, collegesteaching 50 million illiterates to read and write; publishing over 30,000 new book titles each year."
- e. "The emancipation of women -- all positions and professions now open to them on the same terms as men; establishing a nation-wide system of nurseries and kindergartens."
- f. "The practical elimination of those scourges of cholera, smallpox, and typhus that once ravaged the country."
- g. "Abolition of unemployment, with the right of every citizen to work, education, and leisure written into the Constitution."
- h. "The system of insurance against accident, illness, and old age, liberating the people from the fear and dread of want."

1/ War Department, Army Service Forces Manual M 103-2, Geographical Foundations of National Power, Section 1, Headquarters, Army Service Forces, 18 April 1944, p. 49.

2/ Williams, Albert R., The Russians, Harcourt, Brace and Company, New York, 1943, pp. 12, 14.

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- i. "The elimination of crises and depressions by striking a balance between production and consumption -- putting the money into the pockets of the people to buy back the goods that they make, as fast as they can make them."
- j. "A system of planning, working toward an ordered, wasteless development of the nation's resources."^{1/}

13. From the table shown below, it may easily be seen how the Soviet government was able to recruit its labor force. With such an ample population, the recruiting problem was mainly one of bringing the worker to industry or taking the industry to the worker, depending upon the requirements of the current Five Year Plan.

Increase in Number of Workers in the U.S.S.R. ^{2/}
(in million persons)

	<u>1913</u>	<u>1922</u>	<u>1926</u>	<u>1929</u>	<u>1932</u>	<u>1937</u>	<u>1939</u>
Total population	139.7	131.7	147.0	154.8	165.7	169.0	170.5
Urban	25.8	21.7	26.3	29.0	33.2	--	55.9
Rural	113.9	110.0	120.7	125.8	132.5	--	114.6
Persons of working age (16 to 59)	81.5	77.8	82.3	84.7	91.2	--	98.0
Persons employed in offices and factories	11.2	6.6	10.8	12.2	22.9	--	28.7
Percentage ratio of workers to total population of working age	14.0	8.2	13.1	14.4	25.2	--	29.3

14. As early as 1926, the inroads of war, plagues, and starvation among the population, had been largely corrected. The government then began its program of building up the urban population and at the same time, reducing its rural strength. Collectivization of the farms and liquidization of the "kulaks" provided many workers to staff the new industries being established. Many other workers were obtained by voluntary movement from the farms to the cities where the evils of collectivization could be escaped, and better living conditions, better wages, and better food inducements could be found.

^{1/} Williams, op.cit., pp. 5 and 6.

^{2/} Yugow, op.cit., p. 159.

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15. The changes in the social composition of the population of the USSR between 1928 and 1937, is shown by the following official table.^{1/}

<u>Total (in percent of)</u>	<u>1928</u>	<u>1937</u>
Workers and employees	17	35
Collective farmers and handicraftsmen organized in producers' cooperatives.	3	55
Miscellaneous (students, the armed forces, pensioners, etc.)	2	4
Capitalist elements (private traders and kulaks)	5	--
Individual peasants and handicraftsmen not organized in producers' cooperatives	<u>73</u>	<u>6</u>
	100	100

16. It was soon found that retention of the workers was a bigger problem than recruiting. Overcrowding in the large cities was a major cause of labor turnover. By 1933, Moscow had increased its population three-fold to over three million and Leningrad four-fold to nearly three million.^{2/} In the new cities such as Magnitogorsk, which grew to a quarter of a million population between 1928 and 1932, nearly all the workers were living in tents or temporary barracks, and working on construction in weather that was 35 degrees below zero.^{3/} Early in the course of the Five Year Plans, the low real wages, as well as the bad living and working conditions, were another cause of labor turnover and of excessive absenteeism.^{4/5/}

17. In order to raise wages without increasing costs, the government resorted to piece-work on a national basis in 1932. This action, however, only led to further recruiting difficulties as exemplified by the following:

"Complicated work such as toolmaking, which in the most efficient capitalist shops is paid on a time basis, was made the subject of piece-work experiments. The result was very often that there were as many bookkeepers as toolmakers. This situation meant increased difficulties

^{1/} Molotov, op.cit., pp. 8-9, 53-54.

^{2/} Edelman, op.cit., p. 74.

^{3/} Scott, op.cit., pp. 10, 71-73.

^{4/} Scott, op.cit., p. 49.

^{5/} Mandel, William M., A Guide to the Soviet Union, Dial Press, New York, 1946, p. 96.

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in satisfying labor demands, because so many skilled workers and engineers were engaged in non-productive office work."^{1/}

18. Prior to the war, labor worked a seven-hour day and six hours in many industries. Every wage and salary earner in the country got a paid vacation of two weeks to a month.^{2/} During the war, the workers at Magnitogorsk, as at most heavy industrial plants, earned an average of 800 to 1,000 rubles a month, including premium and incentive pay, but not overtime. (A thousand rubles is \$200 at the official rate, and \$83 at the diplomatic rate.) They worked a basic eleven-hour day, except for those under 18, and received time-and-a-half for more than eight hours work. They worked a six-day week, and on the seventh day, contributed labor to the factory farm. Skilled workers earned up to 2,000 or 2,500 rubles. In addition to the normal wage scales, there was an elaborate system of incentive pay. The workers' pay rose in proportion to output. This was backed up by propaganda, "socialist emulation," production drives, patriotic appeals, banners for workers who exceeded their "norm," wall posters, honor rolls, and every possible device to inspire higher production. It was an organized, calculated speedup and stretchout system which was accepted by the workers because of the gravity of the needs of the country. The plants operated on a 24-hour, 7-day week.^{3/}

19. Labor disputes in the USSR were essentially the province of the trade unions. After 1930, the chief task of the trade unions, as laid down for them by the Communist Party, was to "cooperate in every way in the work of industrialization according to the Five Year Plan." In 1933, the functions of the Commissariat of Labor, were merged with those of the trade unions. From then on, all matters relating to labor or social insurance were officially placed under the jurisdiction of the trade unions.^{4/}

20. Although there was no anti-strike legislation in the USSR, there is no record of strikes during the war. Rather, being charged with furthering government labor policies, once wage rates were discussed and agreed upon, the trade unions were required to exert labor discipline in order to keep the workers on the job and to increase production. Even though many of labor's social gains were allowed to lapse during the war, the government, ever mindful of its production goals, repeatedly sided with the workers against the management, when safety, neglect of workers, or arbitrary methods of management were involved.

^{1/} Scott, op.cit., pp. 74-76.

^{2/} Mandel, op.cit., p. 313.

^{3/} Salisbury, op.cit., p. 322.

^{4/} Yugow, op.cit., p. 167.

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21. Absenteeism was combated by the "comradely courts" of the trade unions, by which delinquent workers were brought to trial before their comrades and shopmates. These courts exercised disciplinary powers including reprimands, fines up to fifty rubles, and dismissal. Serious cases were handled by the Secret Police.^{1/} Although a worker had the legal right to leave his job on two weeks notice, it was actually very difficult to get a job release. In 1940, a decree prohibited workers from leaving their jobs without permission.^{2/}

22. The manpower drain on the Soviet labor force for military service may be judged from these figures on the estimated strength of the Red Army:

"From a few thousand men early in 1918, the Red Army grew to five million by 1920.

Early in 1942, the number of men in the services totalled nine million.

By the end of 1942, the Red Army was stabilized at 12,500,000 from then until the end of the war.

A total of 22,000,000 men were mobilized and at the end, the draft ages were 17 to 55."^{3/}

23. Prior to 1940, Soviet law prohibited all child labor below the age of sixteen. In 1940, a decree provided for a yearly mobilization of all boys fourteen to fifteen years old, for training in vocational and railroad schools. In 1941, a decree extended this mobilization to girls of fourteen to seventeen, to be trained in commercial schools. After the young people were taught at government expense for six months to three years, they were obliged to pay it back by four years' compulsory service in government plants to which they were assigned.^{4/}

24. Still another way that workers were obtained, was through compulsion. As early as 1932, the collective farms were required by law to send a definite percentage of their members to the cities to work in industries.^{5/} In addition, there were the concentration camps on which little information and no reliable statistics can be found.^{6/}

^{1/} Prince, Charles, Seminar, The Industrial College of The Armed Forces, Military and Industrial Potential of the USSR, 13 December 1945, p. 3.

^{2/} Scott, op.cit., pp. 75, 150 and 151.

^{3/} Mandel, op.cit., pp. 86, 120 and 121.

^{4/} Yugow, op.cit., pp. 161, 173.

^{5/} Yugow, op.cit., 161, 173.

^{6/} Chamberlin, op.cit., 422 and 423.

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Some fifty thousand workers at Magnitogorsk alone, during the early days of its construction, were directly under Secret police supervision, living in these camps and working under armed guard.1/

25. Total mobilization of manpower in the USSR was achieved through the decree of 14 February 1942, making every man between 16 and 65, and every woman between 16 and 45, subject to a labor draft for the armament industries. Only pregnant women and those with children under eight years, were exempt.2/

26. There is little evidence to be found of allocation of manpower in its usual sense in the economic mobilization of the USSR. Allocation was literally decided by the government when it fixed the location of a plant or an industry. Some consideration was given initially to the availability of manpower, but usually more important was the matter of strategic location or of making a certain area self-sufficient industrially. Once a site was agreed upon, recruiting methods previously mentioned were put into operation and compulsion in its various forms could be used if needed. As early as the First Five Year Plan, it was said "that hundreds of thousands of workers were being transferred from one place to another as new industrial areas were created."3/

27. Emergency allocation was very frequently used, if the evacuation of plants along with its workers can be so termed. Evacuation from the path of the German invasion involved the movement of over twenty million people, as well as more than a million carloads of equipment and materials.4/ As an illustration of what was accomplished, an aircraft plant evacuated from Moscow in November 1941, produced its first airplane in an old airdrome in Tashkent, thirty-five days later. The huge Rostov munitions factory was evacuated to Tashkent in April 1942. Not being able to transport their foundry, the workers built another in twenty-eight days. By 1944, the evacuated arsenal was producing fifty percent more than it had done at Rostov.5/

28. Although the Soviet government used every known means to induce workers to produce more, its chief effort was centered in its emphasis of the "Stakhanov" movement. In 1935, when the government was still groping for means of exhorting its workers to greater and greater output, it discovered that a coal miner, Stakhanov, had multiplied his crew's output several times over by reorganizing accepted methods of mining. By use of a pneumatic hammer and better work distribution, his crew produced in six hours, 102 tons of coal instead of the usual quota

1/ Scott, op.cit., pp. 84 and 85.

2/ Mandel, op.cit., p. 130.

3/ Von Eckardt, op.cit., p. 8.

4/ Lauterbach, op.cit., p. 218.

5/ Lauterbach, op.cit., p. 219.

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of six or seven tons. Skilful propaganda started a record hunt in all branches of industry, and a passionate search for new methods by which to increase output. Competition for greater output embraced all occupations and travelled from one establishment to another. This system of "Stakhanovism" was proclaimed a national panacea for increasing the productivity of labor.^{1/}

29. There were several defects in the Stakhanov movement, one of which was the neglect of good organization and management, but in terms of the worker, it was found that:

"It had an injurious effect on the physical condition of the workers. From the beginning of the craze for records, the plants grew careless about safeguarding labor. The number of accidents increased, the most elementary rules of safety were grossly violated, all laws dealing with hours of labor were disregarded, the cleaning and airing of work places became casual."^{2/}

30. In all of the efforts made to increase output, the emphasis was placed on quantity rather than on quality. As a result, the incentive system in most cases only accentuated the defects in production due to poor organization, inadequately trained skills, lack of regularity of supply, and lack of maintenance of machinery and equipment.^{3/}

Materials

31. The allocation of raw materials to industrial plants was subject to the control of Government agencies; it would seem that there were too many of these agencies, and that they got in each other's way. Producers' goods were divided into three groups:

- a. Funded Commodities: Distributed to Plants by the Supreme Economic Council.
- b. Quota or Contingent Commodities: Items that were less scarce than those under (a) above.
- c. Decentralized items: Items that were supplied in a decentralized manner, and included scarce agricultural products used in industry, and certain building materials.^{4/}

^{1/} Yugow, op.cit., p. 189.

^{2/} Yugow, op.cit., pp. 194 and 195.

^{3/} Yugow, op.cit., pp. 20-24, 193.

^{4/} Bienstock, Schwarz, Yugow, Management in Russian Industry and Agriculture, London, 1944, Oxford University Press, p. 198.

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32. The utilization of prices to assist the government to attain its economic objective was the customary procedure, and prices played an important role in the conversion of the Soviet economy from peace to war. Further, price manipulation served as an incentive to increased production. A system of premiums and penalties was used; the government authorized extra payment (premiums) where the planned figure was exceeded. A similar system was adopted to cover quality. As a result of government control, the base prices of raw materials never rose to any appreciable degree. It should be realized that, theoretically, all profit went to the state, as all capital in production, distribution and finance was state-owned.^{1/}

33. In April 1918, Lenin nationalized all foreign trade, and ruled that all commercial transactions involving buying and selling with foreign governments should be carried out in the name of the Russian Republic. Despite opposition, this rule has continued in Russia. The Peoples Commissariat for foreign trade controls all imports into USSR. This agency draws up the plan for foreign trade, and this is incorporated in the over-all economic plan. This Commissariat controls:

- a. The prices of goods to be imported.
- b. The customs administration.
- c. The actual import of the goods, which is done in vessels owned or chartered by the USSR.

This control of imports is probably one of the most bureaucratic of all Soviet organizations, and although it was not a complete success, it was the only method that could possibly dovetail into the general economic scheme.

34. Despite claims that she could supply all her own needs from within Russia, she was making strenuous efforts in 1939, to obtain additional quantities of machinery, wool, cotton, coal, and non-ferrous metals.^{2/} Lend-lease was naturally controlled by the government and was obtained from the U.S.A. and Great Britain through the medium of certain protocols which were signed by the Allies. It is of some interest that the items requested by Russia from the U.S.A. needed no "justification" as was required from Great Britain.

^{1/} Schwartz, H., American Economic Review, American Economic Review, (A letter addressed to the editor), Menasha, Wisc., December 1946, Vol. XXXVI, pp. 872-879.

^{2/} Yugow, A., Russia's Economic Front for War-Peace, New York, Harper, 1942, p. 279.

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35. The control of production in Russia is more readily understood if it is realized that the people who carry out the policy are, under different titles and offices, the same as those who make the policy. Separate National Commissariats or Government Departments operating under the Supreme Economic Council controlled the production of:

- Foreign Trade
- Construction
- Transportation
- Shipping
- Heavy and medium machinery
- Aviation
- Rubber
- Electrical Industry
- Ferrous and non-ferrous metals

The State Planning Commission, some years before the First Five Year Plan, made a study of the whole problem of industrial location and a complete report was made on Economic Regionalization.^{1/}

36. As a result of the successive Five Year Plans, production was brought nearer to the raw materials, and cross-hauls of semi-finished products were saved. As an indication of the increased rate of production that was achieved or planned between 1928 and 1942, the following table is of interest:

Gross Production (All Industry)

In millions of rubles	Prices as of 1926/27
1928	15.7
1932	34.3
1937	95.5
1938	106.8
1939	123.9
1940	137.5
1941 (Plan)	162
1942 (Plan)	184

37. The composite table, Exhibit A, gives a three dimensional view of Soviet industry in terms of the three Five Year Plans. It is clear that at the end of 1940, little gain was apparent. The fact that the third Plan was not enunciated till 1939, may explain the

^{1/} Dobb, Maurice, Soviet Economy and the War, London, Routledge, 1941, p. 88.

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relatively small increases.^{1/} As an indication of the difficulty of reaching a clear picture of what was actually achieved in Russia's production drive between 1937 and 1942, the table in Exhibit B has been taken from an official document by Molotov on the Third Five Year Plan, and gives the proposed increase in output of industrial production. The figures in this table are of interest when considered alongside those in Exhibit A. In order, however, that a clearer picture may be obtained regarding the true significance of these increases, it should be realized that the per capita output of Soviet workmen was far below that of other industrialized countries. Exhibit C graphically describes this situation.

Facilities

38.- The various Five Year Plans all stressed the need for increased war potential; this was to be done by:

- a. Redistribution of existing plant.
- b. Expansion of existing plant.
- c. Development of local resources.

The ultimate objective was to make industry self-sufficient, thereby reducing the cost and time spent in cross-hauling of the raw materials and end items. The first Five Year Plan ordered the removal of certain comparatively new plants from European Russia to the Urals and to Siberia. The mere removal of plant did not make that plant self-supporting, and the subsequent plans were therefore aimed at the redistribution of plant according to the availability of raw materials, labor, power and transportation. While Germany's New Order envisaged a maintenance of the hegemony of old and established industrial centers and the subordination of surrounding countries, the Soviet Government took quite the opposite view and planned to accelerate the development of the poorer parts of Russia, and even to shift the industrial center of gravity.^{2/} During the earlier planning years (1928-1932), there was a tendency to build mammoth plants and to concentrate industry around two or three of the main cities. This policy was soon realized to be unsound, and the subsequent redistribution phase included strategic siting of plants with a view to reducing their vulnerability to air or even ground attack. To overcome the "out-size" building that had been the vogue, it was decreed that power stations would be limited to 25,000 KW, coal mines to an annual output of 300,000 tons, instead of 700,000, and cotton mills to 50,000 spindles instead of 100,000.^{3/}

^{1/} Fortune, July 1941, op.cit., p. 84.

^{2/} Dobb, op.cit., p. 45.

^{3/} Fortune, op.cit., p. 84.

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39. After the invasion by Germany, the loss of plants in the Ukraine, Volga and central industrial regions caused a severe reduction in output — especially in steel and iron. The immediate Soviet reaction to those losses was:

- a. Construction of new plants.
- b. Reassembly and use of evacuated equipment.
- c. More efficient utilization of prewar capacity of the Eastern plants.^{1/}

In all, more than 25% of lost capacity was reconstructed.

40. The machine tool industry made great strides between 1928-1940, during which time considerable equipment was imported and lessons learned from other countries. In 1940-1941, Russia produced machine tools in excess of her replacement requirements. Many of the bigger armament factories were ordered to build special shops alongside the main plant to produce machine tools for the parent plant. Machine tool plants were given a high priority when evacuation became necessary from European Russia, and only a comparatively small proportion was lost.

41. The manager of a plant in Russia was the head of the lowest unit of the vast and centrally controlled economic system. The plant's capacity was fixed by outside authorities, and the manager had no authority to control the size of his plant or its inventories. In the main, his energies were directed towards the reduction of real unit cost of production. Each plant was allotted its production program, and it was the manager's job to see that these figures were achieved. These plant programs included data on the organization and technological measures considered necessary to achieve the best utilization of all plant resources. It was inevitable that such a system should lead, in some cases, to production in quantity rather than quality. But there were so many party organizations operating at plant level, that any continued failure on the part of a manager would result in his replacement.

42. Much caustic criticism has been levelled at the Russian transportation system. Until 1940, rolling stock, locomotives and track were all reported as being old, inadequate and slow. Between 1913-1939, trackage was increased by a little less than 50%, while freight traffic increased five times. During 1940, Soviet railroads hauled about 4,300,000 tons of freight per kilometer of track, compared with 939,000 for the U.S.A. This tremendous density was sustained despite apparent inadequate

^{1/} Office of Strategic Services, Research and Analysis Branch, Basis Industries in USSR Prewar and Wartime Developments, 6 July 1945, p. 81.

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rolling stock. The third Five Year Plan prescribed a vast increase in railroad facilities, so that by 1942, a 93% increase in production would cause only a 44% increase in tonnage per kilometer. Despite all the adverse comments, the railroad appears to have achieved a magnificent performance. Virtually, all freight that was carried was regulated by government control, and passenger traffic was reduced to a bare minimum. Such passengers as did travel, normally did so in freight cars.

43. In order not to disrupt the existing plants working on armament, large quantities of captured equipment were turned over to trade schools for repair. This became a new and separate branch of the armament industry, and between December 1941 and March 1942, approximately 90% of captured German equipment was repaired and later used. Some of the more important items were: 5,800 cannons; 3,000 tanks; 8,000 machine guns; 33,000 trucks.^{1/}

44. All farms (tractors and farm equipment) were state-owned. The scope and nature of work for each "collective" was set annually, and each had its own production goal. The collective made its own detailed plan and, at intervals, reported progress to the Government.^{2/} Agriculture was controlled by a consumers Commissariat in the same way as meat, textiles and food. On the whole, agriculture played a secondary role to the armament industries because the food levels sank to such an appalling depth, but the government issued most stringent orders regarding rehabilitation of recaptured farm lands in the summer of 1943.^{3/}

^{1/} American Russian Institute, U.S.S.R. in Reconstruction, New York, 1944, p. 87.

^{2/} U.S.S.R. Economy and the War, p. 19.

^{3/} U.S.S.R. in Reconversion, op.cit., p. 98.

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II. COMPARISON WITH THE UNITED STATES THE SALIENT FEATURES OF ECONOMIC MOBILIZATION.

A. Over-all Planning and Policy Making.

United Kingdom

1. The war mobilization undertaken by the United Kingdom was, in essence, similar to that of the United States, which more than in any previous conflict, required strict economic and industrial controls and the active participation of the civilian population.

2. The British system of Cabinet responsibility for over-all strategy and economic policy differs only in form from the Executive responsibility in the United States. In Great Britain, the Prime Minister was the Minister of Defense and coordinated the activities and planning of the three fighting services, while in the United States the President is the Commander-in-Chief of the Armed Forces.

3. The Committee of Imperial Defense in the United Kingdom performed a highly useful and important function in peacetime as the principal planning and policy agency for industrial mobilization, strategy, and all phases of war. It was a supra-departmental agency under the chairmanship of the Prime Minister, with Cabinet Ministers, Chiefs of Staff of the fighting services, and others as members of the Committee or of its subcommittees. Although an advisory agency, the recommendations of the Committee of Imperial Defense were usually followed since its membership included Cabinet members.

4. A similar, permanently functioning policy-making board or committee was lacking in the United States. The Army and Navy Munitions Board was charged with industrial mobilization planning, but its powers and acceptance throughout the government were neither sufficiently great, nor was its membership broad enough, to permit it to formulate national policy.

5. The inclusion of carefully selected civil servants for training with the military at the Imperial Defense College is an example which could be profitably followed in the United States. The implementation of economic mobilization plans of the United States in a future emergency will require the efforts of all departments of the government as well as industry. The inclusion of members of the civilian departments of the government in courses at The Industrial College of the Armed Forces would go far toward insuring this cooperation and coordination.

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Germany

6. | The over-all objectives of Nazi Germany were, first, to overcome unemployment, and then to rearm through step by step procedures, as the opportunities and power of the Party strengthened, until the economic, social, political and cultural life were thoroughly coordinated for a war of survival. Second, as lightning thrusts and blitzkrieg warfare subjugated easy victims having essential materials, facilities and manpower, these conquered countries were to make Germany self-sufficient and thus afford her the possibility of complete domination over Europe and eventually the world. ✓

7. The principal objectives of the United States were to resist, attack and finally destroy the axis powers. In attaining these, her subsidiary objectives were to unify the effort of the country in defense measures, to assist those nations which were committed to block the axis threats, and as an arsenal for democracy, to expand facilities for "armament in depth."

8. The general methods of both countries were similar in nature. The most important were stockpiling; price and wage stabilization; manpower controls; production scheduling; allocation of critical materials; and denial of essential materials to potential enemies.

9. | Germany, in order to carry out the first of her main objectives, established what was known as the First Four Year Plan, whereby the Nazi programs were grafted to the existing great bureaucracies of industry, which were fused and brought under government regulation. | The United States has no parallel to this type of economy, except perhaps, the early experiments of government in business as exemplified by NRA and WPA, which promoted employment and brought about certain social security benefits. ✓

10. The rearmament of both countries presented similar economic problems and eventually followed the same basic considerations in their solution, insofar as a totalitarian government and a democratic government with wartime powers can be compared. The major difference is the fact that Germany had little opposition from within, in gearing her economy in peacetime for a war to be started at her own convenience; while the United States, laboring under isolationist pressure groups, could accomplish little in the way of promoting a wartime economy before the opening of hostilities. The United States, under the impact of a war emergency, was forced to pass legislation step-by-step to gear her economy to war. Government control was generally distasteful to the American way of life, and the necessary wartime legislation controls can be measured directly by the speed with which public opinion fell into line with the national effort.

11. | Germany and the United States were both handicapped in their approach to a war economy. Although detailed plans were worked out by the ✓

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Hohenzollern caste, the Junker aristocracy, the Haushofer Institute fur Geopolitik in Munich, Colonel Thomas, Funk, von Papen, Goebbels and others, no fully integrated and comprehensive economic plan was achieved in advance. This weakness, in an otherwise thorough German concept of a war economy, can be placed directly upon Hitler, who, in an effort to magnify his abilities before the German people, made it plain that he acted through intuition and ordained wisdom. This of course negated many practical plans, caused considerable confusion among the industrial combines and operating agencies, and resulted in step-by-step measures to meet emergencies. The United States experienced a similar pattern of gradual progress through step-by-step procedures. This, however, was not due to hindrance by her leaders, but rather because government controls and military measures were, by the inherent democratic traditions, applied only as the public became educated to the necessity, and were willing to cooperate. Both countries failed to realize the magnitude and far-reaching aspects of economic mobilization.

12. In comparing the controlling agencies of the two countries, only those on a national level will be treated. The Ministry of Economics and Reichsbank, after merger, corresponded roughly with the War Production Board, Federal Reserve Board, Office of Economic Warfare, Defense Plant Corporation, Department of Commerce and certain functions of the Treasury Department. The German Labor Front approximated the functions of the United States War Labor Board and War Manpower Commission, except that the latter lacked authority and depended on patriotic cooperation. The Goering-Speer-Funk combination was paralleled in the United States by the procurement agencies of the War and Navy Departments, the Army and Navy Munitions Board and the War Production Board.

13. German economic intelligence, through the Institute fur Geopolitik was largely responsible for the success of the "economic looting" of occupied countries for critical materials, resources and facilities. Compared with this elaborate structure and scientific study, economic intelligence in the United States was nonexistent.

Soviet Russia

14. In order to compare the salient features of the economic mobilization of Soviet Russia with the economic mobilization of the United States, it is necessary to review some of the basic factors pertaining to the economy of the USSR and to the type of war waged against Germany, some of which are:

a. The economy of Russia is not a democratic welfare economy. It is an authoritarian economy based on political objectives.^{1/}

b. The economy is state-owned, state-directed and state-operated.

^{1/} Lange, op. cit., p. 23.

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c. Efforts to secure an economic basis for effective national defense marked every move in the Soviet industrial revolution.

d. Russia prepared to fight and did fight a war of defense on its own soil.

e. In spite of its political clamor against the capitalist countries, the Soviet government took every opportunity to copy the best features of capitalist industrialization and to utilize the men, materials, money, techniques and know-how of other countries to the best possible advantage to itself.

f. Despite the methods used, the Soviet government had so mobilized its people for defensive war by 1941 as to insure the solidarity of the Russian people behind its leadership.

15. The effect the German invasion of June 22, 1941, on the economic mobilization of the USSR was not dissimilar to the effect produced in the United States by the December 7, 1941 attack of the Japanese on Pearl Harbor. In both instances, the nations immediately committed their entire economic power to the fight. The results in general were somewhat the same. The differences lay in the methods and procedures used. The USSR not only had an industrial mobilization plan, but was operating under its third successive (Five Year) plan when attacked. Emergency or wartime agencies, as created in the United States after the war began, were not needed in the USSR under its form of government.

16. Although the tempo of economic mobilization in the USSR was greatly accelerated by the German invasion, there is no evidence that the form of organization was changed. The maintenance of the Soviet economy despite the losses of facilities and manpower to the Germans must be accepted as proof that the Soviet planning and organization for its economic mobilization met the tests for which they had been aimed.

17. The psychological preparation for war which the Soviet government had drilled into its people over the prewar years culminated with the outbreak of the war. In the United States, national development of a war psychology did not antedate Pearl Harbor.

18. The United States with its much greater economic base, capacity for industrial expansion, technical skill and greater individual productivity was soon able to overtake and outstrip the USSR once its industrial mobilization got under way. That the United States took longer than the USSR to mobilize its economic power for World War II must in the final analysis be attributed to the difference between offensive and defensive war, and the difference between a totalitarian government on the one hand and the slower developing but more effective effort of a free people under a democracy on the other.

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B. Manpower.

United Kingdom

1. The Ministry of Labor and National Service in Great Britain during the war had great authority over manpower including the power to direct any person to perform any service which the individual was capable of performing and to transfer labor into and between vital war industries. Although few cases of compulsion under these powers took place, the authority possessed by the Minister undoubtedly influenced workers in their choice of jobs. Such powers were lacking to the government in the United States. In a future emergency such power will be needed and should be authorized by the Congress.

2. Under the National Service Acts the services of women were utilized by the United Kingdom during World War II, both in industry and the armed forces. In the United States many women entered industry and the armed forces but on a voluntary basis. Should the United States be involved in another war the services of all men and women will be vital to success. Reliance cannot be placed on a voluntary system of securing the services of women during such an emergency. Therefore national service for women as well as men must be provided.

Germany

3. In comparing the manpower utilization of Germany with the United States, full cognizance must be given to the government structure and ideologies of the two countries. Many of the manpower controls exercised by the Nazis were only feasible because of the fact that the government was a dictatorship. In addition, because of this form of government, many decrees were issued and practices initiated during peacetime, which were in reality building up a military economy. While many of these practices gave the Nazis the opportunity to far outstrip the United States in the development of potential wartime economic policies, most of the controls would not be possible under our democratic form of government.

4. The German organization for mobilization of manpower under Sauckel as Commissioner General seems to have been considerably stronger than any United States counterpart. This country never had one single agency for the control of manpower. The War Manpower Commission established in 1942 was an attempt at single-agency control, but this agency did not control selective service, except for a period of about a year, and then in name only. Both countries might have achieved better utilization of manpower if one superagency had been empowered to control both industry and the utilization of manpower.

5. In the field of statistical control of labor the Nazis were far ahead of the United States, principally because of the system they had invoked during peacetime. The Employment Exchange System established after World War I and the Employment Books instituted by the

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Nazis in 1935 were invaluable for the regulation and control of labor. These controls, coupled with the decree requiring compulsory registration in 1938, gave the Nazis a vast advantage in the machinery for the most efficient utilization and allocation of labor.)

6. \ The use of compulsion was also an important factor in the control of manpower in the German military economy. Every person was subject to control as to his place of employment and the type of job assigned. Along with this system the Germans evolved a system of compulsory training, and these two practices helped immeasurably in insuring the most effective use of every worker. The United States could not easily adopt such methods under our form of government, although in many ways we emulated the Nazis by encouraging shifting of workers to vital areas and by establishing large workers' training programs.

Soviet Russia

7. Manpower controls of the USSR were much more complete in World War II than those of the United States. Whereas the United States delayed until late 1942 the activation of a Manpower Commission and that with incomplete powers, the USSR had exerted complete control of manpower long before war began. The shifting of millions of people from evacuated industries and cities to locations beyond the Volga River and the Urals is enough to indicate the complete control over manpower which existed in the USSR. That a great number of the evacuated industries were able to start producing again in record time evidenced not only acceptance on the part of the Russian people of governmental demands, but also their cooperation. In the United States, efforts to move civilian manpower late in the war met with failure. Again, the differences in conditions must be considered in making a valid comparison.

8. There were no strikes reported in the USSR during the war, whereas the problems of strikes or the threat of strikes was ever present in the United States. The differences in the form of government, as well as the greater individual intensification of effort of the American workmen, may account for the unfavorable comparison.

9. The all-out efforts of the Russian people had their effect in greatly increased production, but at the expense of the well-being of the people themselves. That this condition did not apply to the United States to any marked extent may be ascribed to better training, better equipment, better working conditions and higher standards of living.

10. Efforts of the Soviet government to hold managers and executives as well as workers responsible for results and to uphold the workers when the victims of autocratic or arbitrary methods, indicated an appreciation of the fair dealing vital to sound labor relations. The authority over enforcement of safe working conditions given to the trade unions of the USSR during the war, although not generally observed, indicated a real government concern for its workers. By these and other means, the voluntary cooperation of the trade unions was obtained and played a vital part in the mobilization and utilization of manpower.

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C. Materials.

United Kingdom

1. Great Britain accomplished, with marked success, the task of wartime industrial output and control of essential materials. It utilized for the most part existing government departments, each the responsibility of a Cabinet Minister. The same task was performed in the United States by the creation of numerous boards, administrations, and other agencies, separate from existing departments. Economic mobilization plans for the future should be based on the utilization of the existing framework of government in the United States, with a minimum of independent agencies.

Germany

2. The fundamental theory of controlling materials in both the United States and Germany were the same - to provide the desired material in sufficient quantity at the right time and place. Such devices as priorities, preference ratings, conservation, allocation and rationing were used by both countries to direct the flow of raw materials.

3. The control of materials in Germany (during the peak of production in 1944) branched out from the Ministry for Armaments and Ammunition. Under this central and final authority, National Boards and Commissioners screened and approved requirements (military and civilian), assigned the quotas for materials, and directed production scheduling. "Steering spheres," and the regional and local framework of the "estate system" implemented the directives. Except for the "steering spheres," and "estate system," the United States followed the same trend in controlling materials.

4. Both countries found allocation an advantage over priorities, and it is interesting to note that the Army Navy Munitions Board (U.S.) and the Ministry for Arms and Ammunition (Germany) had virtually absolute control over allocations for military supplies. Germany was far more successful in balancing requirements with total production.)

5. Both systems were developed by trial and error as the dictates of war and experience demanded. Each was suited to the temperament of the two governments, and interchange of methods is considered of doubtful value, even if possible of practical application.

Soviet Russia

6. To the outside observer the Soviet system of price control, allocation and distribution of raw materials appeared comparatively simple to operate and efficient in terms of results achieved. This simplicity and efficiency must, however, be related to the over-all

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Russian economic system and to the receptiveness of her people to almost any degree of hardship. The Soviet system was so completely state-organized that such things as price control presented no serious obstacle, while the Soviet form of planning called for no counterpart of the Controlled Materials Plan.

7. In considering any comparison between the Soviet system and that adopted by the U.S.A., it must be borne in mind that the basic difference in the two systems is not so much the type of orders and instructions that were issued but the people to whom the orders and instructions applied. Further, there was a totally different approach to the problem of legalizing such orders and instructions: many of our controls required congressional action with all the political squabbling and delay. No such political maneuvering took place in Russia, because the many rules and regulations were conceived, passed and acted upon by the same people.

8. Despite terrific enemy onslaughts, Soviet production reached an enormous level. No attempt was ever made to ensure a harmonious-working plan, nor was any serious attempt made to safeguard civilian requirements; the entire economy was planned to assist the military machine. There were mistakes, delays and waste, but the Soviet people were told:

- a. What to do.
- b. How to do it.
- c. What would happen if they didn't do it.

9. On the assumption that any future war will be so "total" that nothing short of 100 per cent effort and sacrifice will suffice, it is suggested that some or all of the following features might, with advantage, be considered by the United States.

- a. Complete free exchange of technical intelligence, and the abolition--during wartime--of all patent rights.
- b. Government control over the site location of all plants.
- c. Use of Banks as sources of additional information for the government.

D. Facilities.

United Kingdom

1. The utilization of facilities by Great Britain and the United States during World War II was similar. Methods used for conversion and expansion of plants were in general identical. Britain, through necessity, was forced to rely to a large extent on existing facilities. The location of new plants was dictated by the necessity of protecting them from an attack. These problems did not confront the United States to the same extent.

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Germany

2. In any comparison of the allocation and expansion of facilities in Germany during World War II with the policies initiated by the United States, three basic factors must be given proper consideration. First, as in the case of manpower utilization, due weight must be given to the vast differences in the basic governments of the two nations. Many of the practices introduced by the Nazis to control and allocate facilities would be impossible under our form of government. Second, the Germans, with their concept of a limited "blitzkrieg" type of war, made no pretense of converting their normal economy to a full war economy at the outset of war. It was not until the failure at Stalingrad that the Nazis turned toward full utilization of the entire economy for war and at that point it was too late. And third, the planned Nazi economy began in 1933 with the first attempt to overcome unemployment and all their subsequent plans were shaped in such a manner as to give full play to their imperialistic ambitions and military plans. ✓

3. Comparison, then, of facilities controls in the two countries is difficult and in many ways impracticable. The main German effort to insure control over the productive capacity of the industrial plant was exercised through control over credit and investment, and this sort of power has no parallel in a capitalistic country such as the United States. In the matter of facilities the German position was a singular one among all the other nations involved in World War II. Except during some infrequent emergencies there were practically no shortages in Germany in machine tools, plant floor space or general industrial machinery. The German effort was smaller in magnitude than our own vast effort, but their greatest handicap was their own inadequate planning for total war, so that when they finally attempted all-out war production in 1942, the urgent need for end items precluded any extensive expansion of the facility base. ✓

Soviet Russia

4. In comparing the Russian methods of controlling and organizing facilities, it is necessary to bear in mind the same factors as were considered under "Materials". In addition, it must be realized that all facilities were the property of the state, and that complete control was possible.

5. The Russian standards of efficiency concerning transportation were so inferior as compared with those in the U. S. that the whole problem of location of plants and raw materials assumed a totally different aspect. Cross-hauls have less significance in United States, and the necessity for coordinating labor and power and raw materials take on a different meaning. On this basis it is not believed that America need consider the adoption of any Soviet systems or techniques as they affect transportation or plant development, except with reference to

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plant location.

6. No comparison with regard to agriculture can be made unless the entire make-up of the people of a country is to be changed. Possibly some very modified system of control of prices, directions as to type and quantity of crop, type and quantity of livestock could be introduced into America, but any attempt at collectivization would fail. Finally, it should be understood that because Soviet methods are considered unsuitable for adoption in this country, it does not follow that their methods are considered unsound or less efficient. It does follow, however, that similar methods cannot be imposed upon people whose whole concept of life and rights of the human being are so totally different.

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SUMMARY OF FACTUAL DATA

INTRODUCTION

1. World War II marks that point in history when the concept of total war was first put to the supreme test. In retrospect it would appear that any attempt to implement this concept would have required the total mobilization of the economic resources of the belligerents, yet the inability to adequately comprehend the implications of maximum utilization of economic potential was a universal fault common to both sides and shared by democracies and totalitarian states alike.

2. In a democratic state, time consuming and revolutionary changes are required in making the transition from a peace to a war economy. It would appear that the regulated economy of a totalitarian state could be quickly shifted to a war status at the command of a dictator, yet in World War II, maximum munitions production by both sides was not reached until 1944. An analysis of the economic mobilization efforts of World War II indicates that the difference between the war economics of democracies and totalitarian states is political and not economic. The primary objective is the maximum utilization of all resources. The attainment of this objective is dependent upon the efficacy of the plans, organization and controls employed and the time consumed in their establishment. The purpose of this study has been to analyze, evaluate and emphasize desirable features of the organization and controls employed by the British, German and Soviet governments in their economic mobilization in World War II.

I. ECONOMIC MOBILIZATION PLANS AND POLICIES.

A. United Kingdom.

1. During the period 1919-1939, mobilization planning in the United Kingdom was based on the concept of a limited war effort. National mobilization planning was carried out at Cabinet level with the Committee of Imperial Defense being the principal agency for such planning. This Committee was a supra-departmental agency under the chairmanship of the Prime Minister, with Cabinet Ministers and the Chiefs of Staff of the armed forces as the principal members. Subcommittees such as the Chiefs of Staff Committee, the Manpower Committee, and the Principal Supply Officers Committee, handled specific phases of mobilization planning. Although an advisor agency, the recommendations of the Committee of Imperial Defense were usually followed, since its membership included Cabinet members. All decisions and plans of the Committee were entered in the War Book. The Cabinet was responsible for policy, strategy, and economic organization. The detailed administration of policy was the responsibility of the appropriate minister and his department.

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2. Beginning in 1917, the Imperial Defense College gave carefully selected officers of all the armed forces and permanent civil servants from the United Kingdom and the Dominions training in the broadest aspects of imperial and world strategy in courses of one year's duration. The relation of economic, social, industrial, and financial resources to the higher executive direction of war were also given careful study.

3. In 1934 the British government declared its intention to rearm. However, in spite of the crisis in 1938 occasioned by Munich, 1939 found many phases of industrial mobilization neglected, largely due to insufficient allocation of funds and public apathy. During the first years of the war the government lacked well defined policies for mobilization, and the administrative structure grew bit by bit with the idea of disturbing existing organizations and procedures as little as possible. With the collapse of the French and the fall of Singapore, plans were recast on a long term basis, and all-out mobilization was vigorously undertaken by the Churchill coalition government. The importance of the unification of military and industrial planning was demonstrated by the development of the Joint War Production Staff, a Cabinet committee to advise the Chiefs of Staff Committee. Its mission was the complete fusion of military and production plans and policies.

4. The following wartime agencies were responsible for the various phases of British industrial mobilization:

- a. Ministry of Defense - Coordination of Army, Navy, and Royal Air Force.
- b. Ministry of Production - Basic production plans.
- c. Ministry of Supply - Production of Army materiel and all stores in common use by the three fighting services.
- d. Ministry of Aircraft Production - Production of planes and other Royal Air Force Supplies.
- e. Admiralty - Navy and merchant marine shipbuilding and supplies.
- f. Ministry of Transport - Transportation and shipping.
- g. Ministry of Works and Planning - Construction.
- h. Board of Trade - Consumers goods, factory and storage premises.

5. Manpower policy in Great Britain was decided by the War Cabinet. The policies for both the armed forces and industry was administered by the Ministry of Labor and National Service. This Ministry had a Regional Office in each of the eleven Defense Regions, to deal with questions of recruiting, deferment, training, transfer of labor,

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and other questions affecting the individual. The Regional Controllers were in turn assisted by 44 District Manpower Boards with their 400 Labor Supply Inspectors.

6. The National Service Acts gave the government power to call up for the armed forces and civil defense all men and women aged 18-51, except married women living with their husbands, or women having their own or adopted children under 14 years of age living with them. Boys were registered for the armed forces at 17 years 8 months of age. Men in the age group 18-41 were conscripted. Those between 41 and 51 years of age were registered for industry. Single women aged 19 to 30 years were liable for service in the armed forces, civil defense, or in special industrial jobs, and those 19 to 24 years of age were actually called up.

7. The Ministry of Labor exercised strict control over labor through checks on the utilization and economy of manpower, release of men for the armed forces, changes of jobs, absenteeism, and other matters affecting management and labor. In order to effect a balance in manpower requirements between industry and the armed forces, men were deferred from military service on occupational grounds under a "Schedule of Reserved Occupations". This schedule fixed the age above which certain occupations or skills gave the individual automatic deferment. The system was modified in April 1941 by deferring younger men only if they were employed in "protected" establishments. By 1942 the expansion of the armed forces caused the system of deferments under the Schedule of Reserved Occupations to be replaced by a system of individual deferment. Manpower Boards considered each application individually and granted deferment only if the job was essential and the worker could not be replaced.

8. Government control was imposed on exports, imports, domestic production, utilization, allocation, and storage of the various materials essential to the war economy. From the beginning the system of quantitative controls was based on allocations. The Ministry of Production coordinated the war industries through its Production Council, which decided what raw materials were to be used for what purpose. Actual administration of materials controls was the responsibility of the appropriate Ministry concerned. Not only administration but also policy was centralized, and conflicting claims were settled in relation to their effect on the general strategy and economic policy of the Cabinet.

9. As previously indicated, the prewar planning of the Committee of Imperial Defense did not consider preparation for total war. The early conversion of manufacturing facilities to war production and the construction of new plants was entirely voluntary, although industrialists were offered financial incentives to persuade them to accomplish

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this work. By 1940 time and resources were not available to permit the building of new manufacturing facilities. Therefore, the peacetime industrial plants were rapidly converted to the production of war requirements. Existing factory space, the same staff and labor, and much of the same equipment and tools as had been used for the manufacture of civilian goods were used to produce aircraft, machine guns, artillery, and munitions of all types. All workshops, irrespective of size, had to be brought into war production. A system of using thousands of small firms as subcontractors was developed. Regional Defense Boards acted as clearing centers for work requiring machine tools.

10. Search was made for comparatively secure locations, and the equipment and supplies which would cause bottlenecks, if bombed, were dispersed. New plants were for the most part built where resources for their operation were already available. Essential extension of facilities which peacetime factories could not provide, and new building to meet the need for dispersion, were the two main reasons for plant expansion. The primary effort was directed toward conversion of existing facilities. Britain never reached the point where she had all the plant facilities required, but with lend-lease and the assistance of her allies the situation was reasonably good. Administrative procedures and controls, utilization of facilities, coordinated procurement, dispersion, underground facilities, standardization of civilian products had to be refined as the war progressed in order to make maximum utilization of the resources available.

B. Germany.

1.) The economic mobilization of Germany started with the accession of the Nazi Party to power in 1933. The basic considerations were molded around the grand strategy of Hitler and his brain trusts, from which the following concepts were evolved: solve the unemployment problem and build up national support of the Nazi regime until the economic, social, political and cultural life of the German people are thoroughly unified and brought under rigid control; construct national projects for expansion to a war economy; subjugate weak surrounding countries by blitzkrieg warfare and become self-sufficient by political looting of occupied countries. A preponderance of military might for lightning thrusts, and rapid exploitation of unprepared and weakly defended countries, were the basic principles of "armament in width" upon which the German war economy was built.

2. | No fully integrated or comprehensive over-all plan ever existed except in retrospect. The program was evolved through step-by-step procedures and on a "control as you go" basis, as required to meet crucial issues and new emergencies. The general plan to imple-

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ment the basic Nazi theories was: to fuse the Hohenzollern bureaucracies (Junker aristocracy, industry, finance, etc.) with the Nazi Party; superimpose government controls over all business; militarize the social-economic relationship; and promote the "Master Race" doctrine.

3. The German "war economy" developed in three phases. The first phase (1933-1935) solved the unemployment problem by construction of public works and manufacture of munitions; abolished trade unions; regimented agriculture and labor; established the Wehwirtschaft (Armaments Economy); and founded a system of price and wage controls. The second phase (1935-1939) accelerated the war economy by coordinating the numerous agencies through Goering and Funk, and activated the program of "autarchy" (National self-sufficiency). The third phase (1939-1942) saw the final changes in the top controls of the Nazi economic war effort. Goering was given supreme control of the war economy as head of the Ministerial Council of Defense, while Speer was given very wide powers as Minister of Armament Production. Funk remained Minister of Economics with subordinated controls. Actually Speer, through Hitler's decree in 1942, became the virtual dictator of the German war economy and exercised his control through "rings" "committees" and "steering spheres."

4. Perhaps the most important consideration in an analysis of German manpower control during World War II is the changes wrought by the Nazis in the German labor system. Prior to the Hitler regime the German worker had made great strides in gaining participation in matters which concerned his welfare. Labor had representation in the labor courts, in the social insurance institutions, in the employment exchange system and in nearly every activity which had any control over its general well being.

5. All these gains were wiped out by the Nazis when they gained the ascendancy. Through the German Labor Front and the Trustees of Labor they subjugated the welfare of the worker to the will of the party. All this was done prior to the war and was a most important factor in enabling the Nazis to build up a military type of economy which easily could be shifted from peace to war.

6. All German labor was placed under the Commissioner General for the Mobilization of Labor in the Four Year Plan, in 1942, and was subject to his direct control. The German Labor Front continued in effect but was important only in furthering political propaganda, organizing vacation activities (Strength through Joy, etc.), and eliminating petty grievances in individual enterprises. The Commissioner General handled all problems of labor such as utilization, allocation, wages and recruiting.

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7. From Hitler's rise to power in 1933 to the outbreak of war in 1939, the total labor force in Germany (including the Wehrmacht) rose from 27.3 to 40.8 millions. In the final all-out effort of the Germans, the labor force, including foreigners and the armed forces, rose to 45.2 million as of 31 May 1944.

8. Two factors gave the Germans a long lead over the Allies in the matter of regulation and control of manpower. These factors were: (1) the Employment Exchange System established after World War I for the purpose of pooling and disseminating labor information and (2) the Employment Books introduced in 1935 which played the same role as a draft registration certificate in a military conscription plan. These controls, coupled with a decree in 1938 requiring compulsory registration of all Germans for work of national importance, furnished invaluable statistical information as to the source, composition and skill of the labor force so that it could be utilized most effectively. ✓

9. In spite of the controls placed in effect by Nazi decrees, many of them were never actually implemented in full, due to the German concept of a limited war. For example, regardless of the restrictions on labor turnover, it was an ever increasing problem with an average turnover of about a million workers each month. Also, they failed to fully utilize manpower as shown by industry's minimum 54 hour and maximum 60 hour work week.

10. Requirements (both civilian and military), allocation, priorities, scheduling, production and distribution were regulated by the Minister of Economics through the National Boards and the regional and local framework of the "Stände", an "estate system" of government regulated private business. These controls remained essentially the same from 1934 to 1942, at which time Albert Speer was made virtual dictator of the entire German war economy through his appointment as Minister for Armament and War Production. Goering, however, remained technically the head of the supreme economic body, as Minister of Council for Defense, while Funk retained his title as head of the Ministry of Economics, carrying on routine civilian controls with a subordinate position. ✕

11. The "Speer period" saw controls streamlined through "Main Committees" for industrial production spheres. This provided coordination "vertically" from the administrators of the Main Committees down through the claimant agencies to the prime contractors, with complete integration of controls over production, inventories, prices, imports, conservation, standardization, requirements, etc. Industrial "Rings" functioned as coordinators between the producer and consumer as a "horizontal organization" representing industries furnishing common products such as nuts, bolts, valves, castings etc.

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12. Contractors submitted bills of material directly to the Armament Council, which in turn segregated the requirements according to committees and rings. Allotments of material were furnished on the basis of weight breakdowns in the form of "checking accounts." Claimant agencies then issued "checks" against these accounts to prime contractors. Prime contractors in turn would issue transfer checks to meet the needs of subcontractors etc. Records of all issues and inventories were kept by the Central Armament Accounting Office and thus a balance was achieved between production and allocation, and overdrafts were prevented.

13. The most important weakness in the German attempts at allocation and expansion of facilities was the same weakness which so greatly affected their utilization of manpower, namely, their complete misconception as to the length and scope of the war and the consequent lack of foresighted planning. As a result, expansion of facilities was not contemplated as it was believed that "armament in width" could supply the Nazi war machine with the required munitions. Few shadow factories were built and ready for operation on the advent of war; stockpiling was curtailed rather than encouraged; no training was provided for the special skills needed in a wartime economy; and very little specialization was promoted in armament export. Most of the Nazis controls over the productive capacity of the industrial plant were exercised through power over credit and investment.

C. U.S.S.R.

1. Planning in the Soviet Union for economic mobilization for World War II was based on the principle of raising the country to the position of one of the world's leading industrial nations and thereby assuring an economic basis for effective national defense in an age of industrialized warfare. To attain this goal, the Soviet government depended upon its authoritarian economy which was and is guided by political objectives. In its people lay the latent energy needed for its industrial revolution, and in its agriculture and natural resources it had the economic as well as the social power to buy its way out of the financial morass in which it found itself and to reconcile a majority of its people by means of food, financial incentives and social advantages at least better than the majority had known before. Its methods, however, in forcing the necessary industrial revolution on its people are neither to be admired nor emulated elsewhere.

2. Its employment of foreign aid in the form of concessions, credits, and above all, of the know-how of the so-called "capitalist" countries, indicated its willingness to risk the compromise of its communistic principles temporarily, if thereby it could achieve its long-range aims. Because of the attitude of the Soviet government, this aid has never been given the recognition it deserves. The aid furnished to Russia by the leading industrial nations during the pre-war years to make its industrial revolution possible was probably of even greater importance to Russia's economic mobilization than Lend-Lease itself, even though the latter assistance was most timely and effective. It is noteworthy that the Soviet government used the U.S. as its model for the industrial revolution.

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3. The realism of the Soviet government in preparing for war by such actions as the decentralization of industry, the mobilization of manpower, the creation of economically independent regions, and the location of facilities in depth, though it surprised the world when demonstrated by the effectiveness of Russia's resistance to the Germans, was in fact no deviation from the policies which had been followed throughout the entire course of its state-operated economic planning. Knowing that its communistic government could only survive if supported by an economy completely responsible to its direction, it embraced the principle of "total war" as an incentive and a cohesive force in peacetime.

4. In making any study of the controls and organizations imposed by the U.S.S.R. on materials and facilities, it is essential to realize four points:

- a. Soviet 'war' economy started in 1917 and was a progressive plan aimed at building up Russia's economy to a level where it could overthrow western capitalism.
- b. The Russian people thrived on regimentation and suffering.
- c. In measuring Russia's increase in production, it must be remembered that her starting point was almost zero. Increases were therefore not so difficult to achieve.
- d. Much hysterical and exaggerated comment has been published in connection with Russia's methods and economic goals.

5. There was complete government control of prices, and allocation and distribution of raw materials and imports. The chief emphasis was on quantity, and to achieve this end there was a system of premiums which acted as incentives to increase production, while there were corresponding penalties for failure to meet the target figures. National commissariates controlled the production of the various categories of industry; these commissariates were in their turn controlled by the Supreme Economic Council. The successive Five Year Plans set out the target figures for each industry, and these were further broken down to the figure for each individual plant. The vast size of the U.S.S.R. necessitated a scheme for the most economic use of transportation in order to achieve maximum production with a minimum amount of cross-hauling.

6. The Five Year Plans were the basis of the system whereby industrial expansion was to be carried out in accordance with the available raw materials, labor, power and transportation. The unsound practice of building huge plants and of continuing to expand the already large industrial areas was stopped. Orders were issued that new industrial areas should be created, with an increased number of smaller plants. Government orders on the redistribution of industry were facilitated by their ability to move workers along with actual plant transfers. The

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task of management was solely one of requiring that each plant reach its allotted goal. It had no consumer problems and no trades union opposition and was even given data in the plant program on the organization and technological measures necessary to achieve the best utilization of all plant resources.

7. The transportation system shouldered an enormous load during the war, despite all the adverse comment on it. The distances were colossal, the track was inferior to American standards, and there was a shortage of freight cars and locomotives. To keep the system working, the Soviet virtually abolished all passenger services, set priorities on all freight carried, reduced cross-hauls and raised the status of the railway worker. The Third Five Year Plan called for a huge increase in railroad facilities.

8. Trades unions did much to convince the workers of the importance of meeting their production goals. They organized technical training schools and utilized inspectors in all the large plants to ensure adequate protection for the juvenile labor that was employed. Above all, there were no strikes in Russia, and the trades unions' activities were constructive and cooperative rather than destructive and revolutionary.

9. Agriculture was virtually state-controlled in the same way as industry. The annual production goal, by type of crop, was established by the Commissariat. The collective farms made their own plans for achieving the required goal. Russia suffered enormous losses of agricultural land when Germany over-ran European Russia, and there was a constant shortage of tractors and farm equipment throughout the war.

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II. COMPARISON WITH THE UNITED STATES.

A. Over-all Planning.

United Kingdom

1. The British system of Cabinet responsibility for over-all strategy and economic policy differs only in form from the Executive responsibility in the United States. In Great Britain the Prime Minister was the Minister of Defense and coordinated the activities and planning of the three fighting services, while in the United States the President is the Commander-in-Chief of the Armed Forces.

2. The Committee of Imperial Defense in the United Kingdom performed a highly important function in peacetime as the principal planning and policy agency for industrial mobilization and strategy. It was a supra-departmental agency under the chairmanship of the Prime Minister, with Cabinet Ministers, Chiefs of Staff of the fighting services, and others as members of the Committee or of its subcommittees. Although an advisory agency, its recommendations were usually followed, since membership included Cabinet members. A similar, permanently functioning, policy-making board or committee was lacking in the United States. The Army and Navy Munitions Board was charged with industrial mobilization planning, but its powers and acceptance throughout the government were not sufficiently great, nor its membership broad enough, to permit it to make national policy.

3. The inclusion of carefully selected civil servants for training with the military at the Imperial Defence College is an example which could be profitably followed in the United States. The implementation of the economic mobilization plans of the United States in a future emergency will require the efforts of all departments of the government as well as industry. The inclusion of members of the civilian departments of the government in courses at The Industrial College of the Armed Forces would go far toward insuring this cooperation and coordination.

Germany

4. The rearmament of both the United States and Germany presented similar economic problems and eventually followed the same basic methods in so far as a totalitarian government and a democracy can be compared. Germany however had little opposition from within or without in preparing for a war economy, while the United States was forced to proceed step by step as public opinion was educated to the necessity for more rigid controls.

5. A rough parallel of the controlling agencies follows:

<u>Germany</u>	<u>United States</u>
Ministry of Economics	(War Production Board
Reichbank	(Federal Reserve Board
	(Office of Economic Warfare
	(Defense Plant Corporation
	(Department of Commerce

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Germany

Labor Front

Minister of Council for
Defense - Goering
Minister for Armament
and Ammunition - Speer

United States

(War Labor Board
(War Manpower Commission
(Army Navy Munitions Board
(War and Navy Depts. procuring agencies
(

Soviet Russia

6. In attempting to compare the economic mobilization of the U.S.S.R. with that of the United States, the many differences between the two countries in terms of their economic structures, their governments, their capital goods, their managerial, technical and scientific skills, and the methods by which they achieved economic mobilization, seemingly make any definite comparisons impossible. However, a study of the development of Russia's economic power in peacetime reveals a remarkable coordination of strategic and economic planning and many points of similarity.

7. Any valid comparison must take into account the type of defensive war waged by Russia in which it traded "space for time." Not only had it been preparing for twenty-five years to fight such a war, but its wars of history and the civil wars of the Bolshevik Revolution had been a bitter but fruitful source of experience. War, or the threat of war in the period between World Wars I and II, provided the Soviet government with a most potent means of urging its people to hasten the industrial revolution necessary for its economic mobilization. The lack of realism in the United States during the same period was not corrected until December 7, 1941.

8. The Five-Year Plans of the U.S.S.R. were very effective industrial mobilization plans. They possessed the elasticity and adaptability suitable for its revolutionary society and were in accord with sound military principles. With its totalitarian form of government and its regulated economy, the Soviet government was able to realize a great part of its aims prior to the outbreak of war. Hesitancy on the part of the United States to develop an effective industrial mobilization plan during the prewar years or refusal to adopt the 1939 plan delayed mobilization in the U. S. for many months after the war began.

9. The results obtained by the Soviet Union through its economic mobilization, in terms of production of guns, tanks, airplanes and other weapons of war were comparable to the results obtained by the U. S. Such production was achieved only at a sacrifice in production of nearly everything not in demand for the war effort. The U. S. took longer than the U.S.S.R. to mobilize its economic power after the war began, but because of its greater economic cushion, it eventually exceeded the U.S.S.R. in production output.

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B. Manpower.

United Kingdom

1. The Ministry of Labour and National Service in Great Britain had the power to direct any person to perform any service of which he was capable, and to transfer labor into and between vital war industries. Although few cases of compulsion under these powers took place, the authority possessed by the Minister undoubtedly influenced workers in their choice of jobs. Such powers were lacking in the United States. In a future emergency such power will be needed and should be authorized by the Congress.

2. Under the National Service Acts the services of women were widely utilized by the United Kingdom, both in industry and the armed forces. In the United States many women entered industry and the armed forces but on a strictly voluntary basis. Should the United States be involved in another war the services of all men and women will be vital to success. Reliance cannot be placed on a voluntary system of securing the services of women during such an emergency. Therefore national service for women as well as men must be provided.

Germany

3. Comparison of manpower utilization in Germany and the United States is made difficult because of the entirely different structures of the two governments. The Nazis exercised a far stronger control over manpower which enabled them to arbitrarily allocate their manpower. This use of compulsion gave them a huge advantage over the United States. In addition, the Germans began their "planned economy" in 1933 so that when war came many of the controls necessary in wartime were already in effect and needed only to be adjusted and tightened. Their manpower organization during the period it was under a single commissioner general was decidedly more efficient than any counterpart in our wartime system. The employment exchange system established after World War I and the Employment Books initiated in 1935, coupled with compulsory registration of labor in 1938, were of immeasurable help to the Nazis in furnishing the necessary machinery to effectuate the most efficient utilization of manpower.

4. The War Manpower Commission in the United States was created for the purpose of controlling the allocation and distribution of manpower, but because of the repugnance of the American public toward regimentation of labor, the Commission was not armed with any real authority and depended solely on cooperation.

Soviet Russia

5. Many methods were used by the Soviet government in the psychological preparation of its people for war. One method was the prewar mobilization of manpower. With mobilization in effect at the beginning of the war, little change was necessary as the war progressed. In the U. S., even partial mobilization was delayed for a year after the war began, and total mobilization of manpower was never adopted.

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6. The shifts of millions of Russians from evacuated cities and industries to new locations beyond the Volga and the Urals were a remarkable achievement. This shifting of workers was in marked contrast to the difficulty late in the war of getting workers in the U. S. to move to labor-shortage areas.

7. Trade unions in the U.S.S.R. played an important role during the war. There were no strikes reported in the U.S.S.R. during the war. Support of its trade unions by the Soviet government was an acknowledgment of the vital part played by the unions in achieving full utilization of manpower. Its use of trade unions to administer health and safety measures and to enforce better working conditions assured their active participation in national efforts to increase production and improve its quality.

C. Materials.

United Kingdom

1. Great Britain accomplished with marked success the task of wartime industrial output and control of essential materials. It utilized for the most part existing government departments. The same task was performed in the United States by the creation of numerous boards, administrations, and other agencies, separate from existing departments. Economic mobilization plans for the future should be based on the utilization of existing framework of government in the United States with a minimum of independent agencies.

Germany

2. Germany controlled the flow of raw materials through a strict system of allocation, based on total production. Under Speer, the National Boards and Commissioners screened requirements, assigned quotas, and directed production scheduling. The operating agencies were "steering spheres," "rings and committees." The United States set up controls through numerous agencies which were created to break bottlenecks in production. In the main, however, critical materials were controlled by the War Production Board, which delegated wide authority to the Army-Navy Munitions Board and the military procurement agencies. Both countries discovered that allocation was more practical than the preference rating or priority system.

Soviet Russia

3. The Soviet Government was faced with a totally different problem to that confronting the United States in World War II. Complete state-ownership of virtually all materials and finance made the imposition of price controls, allocation and distribution a problem simply of organization without the added difficulties of public opinion and political argument.

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4. There were mistakes, delays and waste in the Soviet system, and no serious attempt was made to safeguard civilian needs; but despite these difficulties, the Soviet people realized that total war meant 100 per cent effort and sacrifice, and no imposition was too severe provided it aided the nation's war effort.

5. Only on the assumption that our people will regard total war as requiring the same degree of national unity and sacrifice as practiced in Russia can any points from the Soviet system be advocated for use by America. Such features might be:

- a. Completely free exchange of technical intelligence, and the abolition—during wartime—of all patent rights and trade secrets.
- b. Government control over site-location of plants.
- c. Use of banks as sources of additional information for government.

D. Facilities.

United Kingdom

1. The utilization of facilities by Great Britain and the United States during World War II was similar. Conversion and expansion of plants were accomplished in much the same manner, although Britain, due to lack of time, material, and manpower, was unable to expand her industrial base as extensively as the United States.

Germany

2. Three factors affect any attempt at comparison of the Nazi control of the allocation and expansion of facilities during World War II with that of the United States. These factors are:

- a. The vast gulf separating the governmental structure and ideologies of the two nations;
 - o. The Nazi concept of a "blitz-krieg" type of war, which caused them to make no pretense of converting the normal economy to a full war economy at the outset of war; and
- c. The "planned" Nazi economy begun in 1933 and aimed at furthering their imperialistic and militaristic plans.

3. The Germans exercised most of their control over facilities by their control over credit and investment, and this sort of power had no parallel in the United States. Germany was unique among all the warring nations in that, except for infrequent emergencies, there were practically no shortages in machine tools, plant floor space or general industrial machinery. Their inadequate planning was costly, however, for when they attempted all-out production in 1942 after Stalingrad, the urgent need for munitions precluded their expansion of the facility base.

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Soviet Russia

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4. The Soviet system of state-owned facilities and their peacetime program of industrial expansion were totally different. However, it must be emphasized that in spite of vast transportation difficulties, loss of territory, and loss or damage to facilities by enemy action, the Soviets made excellent use of their facilities and achieved remarkable results.

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CONCLUSIONS

It is concluded that:

1. In World War II, inability to visualize at the outset the extent of economic mobilization required to support total war was a fault common to all belligerents studied. The Soviet Union, however, understood the economic effort required to support total war better than the others, and undertook steps to initiate such an effort at an earlier date.

2. Prewar economic mobilization planning in Great Britain was conducted on the highest government level, and assured plans acceptable to all government departments.

3. The tentative regional control system of Britain provided a decentralized and flexible organization containing representatives of the essential government departments in each region and capable of operating in the event of emergency.

4. In Britain, the legislative authority over the services of all individuals above 17 years of age resulted in the maximum utilization of manpower and womanpower.

5. Economic mobilization planning based on faulty strategic concepts may bring disaster to a nation, as it did in the case of Germany in World War II.

6. The Nazi "planned economy," initiated several years before the war, made it possible for the Germans to easily shift into a war economy by merely adjusting and tightening their peacetime controls.

7. The economic mobilization of Soviet Russia for World War II was successful because of:

- a. Its Five-Year Plans.
- b. The government structure which supported and executed those plans.
- c. Its handling of Trade Unions.
- d. The psychological preparation of its people.
- e. Lend-lease and other foreign aid.
- f. The type of defensive war it fought.

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RECOMMENDATIONS

It is recommended that:

1. Planning and administration of wartime controls over manpower, materials, and facilities be coordinated by a single agency. Members of the Congress should be drawn into the discussions in the planning stage.

2. This agency prepare economic mobilization plans as a part of an over-all National Security Plan, and should be under constant study and revision.

3. The National Security Plan provide for the necessary enabling legislation to insure progressive implementation of the plan.

4. The National Security Plan provide for universal national service as the fundamental structure of all manpower controls in any future emergency.

5. A regional organization for the decentralized administration of wartime controls, with each region containing representatives of all essential government departments, be adopted by the United States, and that a nucleus of this organization be established in peacetime.

6. Organized labor be given a more active part in the preparation and execution of economic mobilization plans, in order to secure their full cooperation in the maximum utilization of manpower.

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THE THREE FIVE-YEAR PLANS

	I. 1928-1932		II. 1933-1937		III. 1938-1942	
	Planned	Actual	Planned	Actual	Planned	Actual
	Increase Over 1927	Increase Achieved	Increase Over 1932	Increase Achieved	Increase Over 1937	Increase As of 1940
Oil	87%	92%	110%	37%	77%	12%
Pig Iron	203	88	160	134	52	3
Steel	148	40	189	200	58	4
Rolled Steel	150	34	203	203	62	0 est
Coal	112	81	137	99	90	29
Electric Power	336	165	184	172	106	10 est*
Autos & Trucks	...	3,467	737	737	100	-3 est*
Tractors	4,131	3,884	75	59	---	...
Locomotives	72	72	238	91	48	1 est*
Freight Cars	...	136	431	173	103	-14 est*
Machine Tools	...	743	167	223	---	...
Lumber	270	93	76	30	56	...
Cement	245	88	116	57	102	-4
Paper	...	69	112	77	80	...
Cotton Fabrics	88	8	88	27	42	9 est*
Wool Fabrics	178	-6	141	17	67	16 est
Leather Shoes	239	247	120	100	57	-10 est*
Sugar	94	-38	202	189	44	-33 est*
	:	:	:	:	:	:

* As of 1939

Fortune: July 1941

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 EXHIBIT A
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Increase in Output of Industrial Production

Classification	1937	1942	1942 in percent of 1937
Production of means of Production (in million rubles, in prices of 1926-7)	55,200	112,000	203
of which:			
1. Machine-building and metal-working industries (in million rubles).....	27,500	62,000	225
Inclusive of:			
a. Metal-cutting Machine tools (units)	36,000	70,000	194
b. Main line Locomotives (units)	1,581	2,090	132
c. Main line Freight cars	58,800	90,000	153
d. Automobiles	200,000	400,000	200
2. Electric Power (in million kw-hours)	36,400	75,000	206
3. Coal (in thousand tons)	127,300	230,000	181
4. Oil with gas (in thousand tons)	30,500	54,000	177
5. Peat (in thousand tons)	23,800	49,000	206
6. Pig Iron (in thousand tons)	14,500	22,000	152
7. Steel (in thousand tons)	17,700	28,000	158
8. Rolled Steel, pipes and forgings from ingots (in thousand tons)	13,000	21,000	162
9. Chemicals (in million rubles)	5,900	13,400	227
10. Cement (in thousand tons)	5,500	10,000	183
11. Saw-mill products (in thousand cu meters)	28,800	45,000	156

The Third Five-Year Plan for National Economic-Development of U.S.S.R. p. 27.

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Exhibit B

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C O M P A R A T I V E P E R C A P I T A P R O D U C T I O N

Products	Unit	U.S.S.R.	U.S.A.	Germany	England	France	Japan
Electric Power	Kwh	215	1,160	735	608	490	421
Pig Iron	Kilo	86	292	234	183	189	30
Steel	Kilo	105	397	291	279	188	62
Coal	Kilo	757	3,429	3,313	5,165	1,065	643
Cement	Kilo	32	156	173	154	86	60
Cotton Cloth	Sq. in.	16	56	...	60	31	57
Footwear	Pair	1	2.6	1.1	2.2
Paper	Kilo	5	48	42	42	23	8
Sugar	Kilo	14	12	29	8	21	17
Soap	Kilo	3	12	7	11	10	...

Figures for U.S.S.R. are for 1937

Figures for other countries are as a rule for 1929

Yugow, op.cit., p. 36.

Exhibit C

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