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Economic Planning as it Affects Military Strategy: The Rathenau and Speer Systems of Modern Industrial Warfare (1914-1945)

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A thesis presented to the faculty of the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027

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This study has been divided into four major parts: the industrialization of Germany prior to World War I; the Rathenau System of war-production during the First World War; German military and economic preparation for war from 1919-1939; and the Speer system of war production during the Second World War. The analysis, basically, follows a chronological course, and results in an examination of those decisions and events which influenced Germany's economic and military potential during both world wars. The last chapter is an assessment by the author of the major lessons learned from both world wars.

The conclusions of this study indicate that any industrialized nation contemplating war, defensive or offensive, should prepare detailed plans for mobilizing the human and national resources of the nation for total war, even if limited martial effort is the objective. Additionally the study shows that centralization of strategic and economic planning at the national level is key in achieving the national objective during war.

ECONOMIC PLANNING AS IT AFFECTS MILITARY STRATEGY: THE RATHENAU AND SPEER SYSTEMS OF MODERN INDUSTRIAL WARFARE (1914-1945)

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements of the degree

MASTER OF MILITARY ART AND SCIENCE

by

ALLEN R. [illegible], MAJ, USA
B.A., Auburn University, 1971

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1975

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ABSTRACT

Advancements in Science, technology, and industrialization during the late-nineteenth and early-twentieth centuries had a subtle and almost undetected impact on the conduct of warfare. The increased lethality of weapons systems, the more efficient means of mass-production, and the improved lines of communications, especially the railroads, caused most military and political strategists to overestimate their national power. This misperception was compounded by the inability to recognize and exploit the military advantage offered by technological advancements. Instead of developing new doctrines, tactics, and techniques to complement and maximize the advantages of improved technologies, these planners relied on doctrines that had proven successful in the past. This was especially true during the opening phase of the First World War.

By relying on outdated tactical doctrine, industry was relegated to providing the "sinews" of war prior to the first battle. Limited wars were to be fought with stockpiled material and no comprehensive plans were made to insure an uninterrupted flow of supplies from the factory to the front in the event the war lasted longer than anticipated. No meaningful contingency plans were developed beforehand for mustering the

resources of the nation in support of final victory. In short, the economic element of power was not significantly considered during strategical planning.

This study focuses on this strategic failure by using the German experience in World Wars I and II as an example. It should be noted that the failure to properly access and employ the economic element of power was not unique in Germany. The other industrialized nations of the world were just as negligent of this omission.

This study has been divided into four major parts: the industrialization of Germany prior to World War I; the Rathenau System of war-production during the First World War; German military and economic preparation for war from 1919-1939; and the Speer system of war production during the Second World War. The analysis, basically, follows a chronological course, and results in an examination of those decisions and events which influenced Germany's economic and military potential during both world wars. The last chapter is an assessment by the author of the major lessons learned from both world wars.

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study shows that centralization of strategic and economic planning at the national level is key in achieving the national objective during war.

ACKNOWLEDGEMENTS

One of the inherent problems faced by any dynamic organization is finding the time for introspective and reflective thinking. In this respect the Army is no different from any other organization. Because of the frantic pace of daily activities, little time is left to critically examine and benefit from the lessons of history. As a result of this neglect, many avoidable mistakes are repeated unnecessarily and valuable human and material resources are expended needlessly. It was with this point in mind that this study was undertaken.

On several occasions during the research and writing of this study, I became discouraged by the lack of adequate time and felt that I might have to abandon the project. On each of these occasions my Doktorvater and mentor, Professor Joseph R. Goldman, quickly put me back on track. He convinced me that I could find the time and encouraged me to continue with my work. For this, the inordinate amount of time he spent working on this project with me, and his guidance, criticism, and assistance, I wish to express my sincere gratitude.

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No words can repay the special debt I owe to my wife, Kathleen, and my nine children. Their constant understanding, encouragement, and support enabled me to complete this undertaking. During my future assignments, I hope to repay them in some measure for my neglect while I was completing this project.

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INTRODUCTION

During the last 150 years the economic industrialization of many nation-states brought with this "revolution" an apparently undetected change in the nature of warfare. As a result of this change, ruling monarchs and national leaders lost the freedom of employing military forces indiscriminately in pursuit of personal whims. Unfortunately for those nations involved in the evolving industrial process, their military strategists did not perceive the change; nor the full range of military advantages offered by an expanding industrial base.

With the exception of a few men such as Alfred Mahan (1840-1914), strategists failed to grasp the military potential of an industrial base; new technologies; and new production techniques. They viewed industry as an advantage, but only in so far as it could provide them with great quantities of weapons, munitions, and equipment for stockpiling prior to the outbreak of hostilities. Little thought was given to full mobilization of industry during war. Consequently, comprehensive economic contingency planning in support of the national military and political objectives was either neglected or ignored completely.

By neglecting to consider the new (economic) element of national power in its proper perspective, military and political planners placed the security and survival of their nations

in jeopardy. Furthermore, this failure condemned the planners to hold on to superannuated strategies which were rigid and inflexible because of inadequate contingency planning.

The German experience in the two world wars of this century provides an excellent example of an industrial nation that did not properly consider the economic element of power during the formulation of military and political strategy. This omission was not considered to be a failure in Germany in 1914, nor in 1939, because the military strategists planned only for limited wars to achieve their objectives.

In retrospect, it is easy to criticize the German strategists of 1914 for their failure to consider properly the military potential of their country's industries; however, their culpability can be mitigated in the light of past battle experiences. This cannot be said for Hitler's strategists in 1939. The military planners of the Third Reich had the experience of the First World War at their fingertips. Unfortunately for Germany, the lessons learned during the previous war played only a minor role in the formulation of strategy under the Fuehrer.

Prior to 1914 German strategists based their planning on a unique type of warfare introduced by von Bismarck, von Moltke, and von Roon during the wars for German unification (1864, 1866, and 1870-71). In each conflict Prussia struck

with her efficient, well-disciplined military forces to gain a strategic strangle-hold over her enemy. By carefully selecting the time and place for employing her forces, Prussia was able to gain a preponderance of military power over her opponent at the point of decision. It was in this manner that Prussia was able to defeat a numerically superior Austria-Hungary, and France.

Bismarck's and von Moltke's strategy did not entail the total mobilization of the population, nor the total resources of the nation as envisioned by Lazare Carnot (1753-1823), the organizer of the levee en masse during the French Revolution.[1] Carnot's situation was different. He had to support armed forces involved in a protracted conflict. Prussia's strategists developed their plans to avoid such a long-term conflict, and they were successful.

It can be argued that the German strategy of the last half of the nineteenth century, and the first half of the twentieth century, is best described as favoring a "limited war" posture. Surprise, speed, and strategic advantage were the essential ingredients--and became the key to the success of this method of warfare.

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[1] Huntley Dupre, Lazare Carnot, (Oxford: The Mississippi Valley Press, 1940), 194. Carnot's levee en masse envisioned all of the nation's resources, civilian and military, being directed to the war effort. Carnot believed that all elements of society should share, and indeed had, the responsibility to make sacrifices in support of the nation's ability to prosecute the war.

In order to achieve success, the strategy of limited war required very detailed planning and preparation. The new railroads, and other lines of communications, were used to mass forces quickly. Helmuth von Moltke, who was Chief of the Prussian, and later the German, General Staff (1857-1888), was one of the first men to recognize the tactical and strategic advantages offered by the railroads in military operations.

Under von Moltke's direction the General Staff became involved deeply in preparing detailed contingency plans directed primarily against Austria-Hungary, France, and Russia. These plans involved very intricate timetables for mobilization; and these timetables were based on the availability of railroads, rolling stock, and the new road system being developed in Europe. With the railroads, armies could be transported "...six times as fast as the armies of Napoleon had marched, and the fundamentals of all strategy--time and space--appeared in a new light."[2]

The military successes realized by employing von Moltke's strategy had a profound, devastating effect on German military thinking in the twentieth century. Increased emphasis was placed on planning for war. Timetables for mobilization and

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[2]Hajo Holborn, "Moltke and Schlieffen: The Prussian-German School," Makers of Modern Strategy, (Princeton: Princeton University Press, 1971), ed. by Edward M. Earle, 177.

movement of military forces were so detailed that last minute changes were deemed unfeasible. Once the decision to go to war was made, nothing was permitted to interfere with these plans. There was no flexibility to alter existing contingency plans based on a changing political situation. It was for this reason that considerations of strategy became paramount in Germany, which resulted in the General Staff assuming a position of primary importance for political, as well as military, decision-making.[3]

By relying on von Moltke's formula for military success, as well as in viewing industrialization as the means of preparing and stockpiling the "sinews" of war in peacetime, the German strategists from von Schlieffen to Hitler made a fatal error. Unlike von Moltke, they did not perceive the military potential offered by science and industry. Their strategic concepts were based on doctrines, tactics, and techniques that were successful for von Moltke with the equipment available to him. Prior to the beginning of World War I, what the General Staff failed to perceive was the impact sophisticated machine-guns, precision firing artillery, improved communications, airplanes, and motor vehicles would have on the battlefield.

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[3]Gordon A. Craig, The Politics of the Prussian Army: 1640-1945, (Oxford: Clarendon Press, 1955), 196.

It has been suggested that the Imperial strategy would have worked if von Moltke (the Lesser) had faithfully implemented the Schlieffen Plan.[4] Available evidence indicates that this thesis is not valid. The introduction of the machinegun in great quantities quickly put an end to the anticipated war of movement. Additionally, although the modern weapons were available for sometime prior to the start of the war, it is clear that the General Staff did not adequately determine the consumption rates of the new weapons, and then compare this drain to existing stocks. Had they done so, they would have been more cautious in advising the Kaiser to implement the Schlieffen Plan.

Because of this lack of foresight, along with the conviction that their wars would be limited in duration, the General Staff failed to develop new doctrines, tactics, and techniques to enhance and complement the new weapons systems, equipment, and industrial capabilities available to them. The Reich was not alone in this failure. The strategists of the other industrialized nations were just as blind as the Germans.

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[4]Lynn Montross, War Through the Ages, (New York: Harper & Row, 1960), 694; Walter Goerlitz, History of the German General Staff: 1657-1945, (New York: Frederick A. Praeger, 1967), tr. by Brian Battershaw, 159-162; Hajo Holborn, A History of Modern Germany, (3 vols.: New York: Alfred A. Knopf, 1969) 1840-1945, III 347-349; and Barbara W. Tuchman, The Guns of August, (New York: Dell Publishing Co., 1971), 243.

Owing to the predicted short duration of their offensives, the Imperial strategists saw no need to mobilize fully their industrial base. It was expected that the wars would be won with the supplies and equipment available from stockpiles at the outbreak of hostilities. Hindsight now reveals that Germany's military planners were guilty of making preparations to fight their last war all over again.[5] In military circles this common mistake is inexcusable.

Because of the optimism associated with the Schlieffen Plan, coupled with the General Staff's inability (or lack of foresight) to consider the alternative of failure, economic and industrial contingency plans were not considered seriously for collateral development.[6] The only economic planning undertaken in support of this plan by the Imperial Government was "...in the sphere of money and credit and of public finances."[7] Consequently, the nation entered the First World War (as did the other combatant powers) with no major plans for mobilizing the economy; with no thought of the possible consequences of a protracted war; and with outdated military doctrine, tactics,

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[5]Tuchman, 38.

[6]Gerald D. Feldman, Army Industry and Labor in Germany 1914-1918. (Princeton: Princeton University Press, 1966), 42.

[7]G. Stolper, K. Hauser, and K. Borchardt, The German Economy 1870- to the Present, (New York: Harcourt, Brace, and World Inc., 1967), tr. by Toni Stolper, 54.

and techniques.[8]

Within a month after the outbreak of the war, in September 1914, the German offensive strategy was defeated at the First Battle of the Marne. The old military concepts of tight formations, massed infantry, and flamboyant cavalry charges fell prey to the lethality and accuracy of modern weapons. The devastating effects of the new weapons, coupled with the outdated tactics of the nineteenth century, gave birth to the static war of attrition. Owing to a lack of planning in industrial production capabilities, the Reich was ill-prepared for this type of war.

Shortly after the outbreak of World War I, Walther Rathenau, an industrialist and head of the German General Electric Company (Allegmeine Elektrizitats Gesellschaft, or A.E.G.), recognized there just might be a shortage of critical raw materials needed to support a program of war procurement in the event of a blockade. Encouraged by one of his associates, Richard von Moellendorff, Rathenau went directly to the War Ministry a few days after the war began and suggested a survey be conducted to determine the status of raw materials currently

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[8]Holborn, III, 459.

available in Germany.[9]

The initial survey, based on estimates, indicated that Germany only had on hand stores of raw materials for six months of fighting.[10] Impressed with Rathenau's insight and industrial background, Erich von Falkenhayn, the War Minister, prevailed upon him to organize and head a War Raw Materials Bureau (Kriegs Rohstoffabteilung, or K.R.A.) within the War Ministry. Rathenau accepted the appointment and immediately tackled the task at hand--the conversion of the Reich's peace-time economy into a war-time economy. He was able to accomplish his mission within a year. Through the K.R.A., the administrative foundation was laid for Germany's war-economy.[11] It was the centralized economic control of this organization that sustained the Kaiser's forces through four years of the most torturous warfare ever experienced by man.

During the opening phases of the Second World War (1939-1941), Adolf Hitler skillfully used the strategy of short,

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[9]David Felix, "Walter Rathenau," History Today, XX (September, 1970), 641.

[10]Feldman, 45.

[11]Stolper, 65.

violent, offensive wars of movement called Lightning War (Blitzkrieg). Reminiscent of the strategy of von Moltke the Elder, and von Schlieffen, Hitler's Blitzkrieg was very successful until it was stopped before Moscow in December 1941.

Hitler's strategy of Blitzkrieg was initially successful because it recognized the value of new technologies on mobile weapons systems (i.e., such as the airplane, the tank, and wireless communications), and it used these new means to restore movement to the battlefield. J.F.C. Fuller, B.H. Liddell-Hart, and Heinz Guderian are credited by most scholars as being the fathers of the modern mechanized army.[12] While these men did make significant contributions in mechanized concepts, it was Hans von Seeckt, the man charged with rebuilding Germany's Army after the Great War, who originally conceived the idea.

In his famous memorandum on "Basic Ideas for the Reconstruction of our Armed Forces" (Grundlegende Gedanken fur den Wiederaufbau unserer Wehrmacht), in 1921, von Seeckt

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[12]Larry H. Addington, The Blitzkrieg Era and the German General Staff, 1865-1941, (New Brunswick: Rutgers University Press, 1971), 28-35. Early works of Fuller and Liddell-Hart on this subject: J.F.C. Fuller, The Foundations of the Science of War, (London: Hutchinson and Co. Ltd., 1925), and On Future Warfare, (London: Sifton Praed & Co. Ltd., 1928); and B.H. Liddell-Hart, The Remaking of Modern Armies, (London: John Murray,1927). Also see Heinz Guderian, Panzer Leader, (New York: Ballantine Books, 1972), tr. by Constantine Fitzgibbon, and F.W. von Mellenthin, Panzer Battles, (New York: Ballantine Books, 1973), tr. by H. Betzler, ed. by L.C.F. Turner.

stated, "The whole future of warfare appears to me to be in the employment of mobile armies, relatively small but of high quality, and rendered distinctly more effective by the addition of aircraft, and in the simultaneous mobilization of the whole defence force...."[13] Von Seeckt was forced into searching for new military concepts because of the martial limitations placed upon Germany by the Versailles Treaty. Restricted to 100,000 men, von Seeckt felt that motorization/mechanization was the only means available to him to maximize the Reich's military strength.[14]

Because of von Seeckt's insight, besides the contributions of the other aforementioned strategists, the General Staff successfully developed new doctrine, tactics, and techniques to capitalize on the military potential of new technology. Born out of this effort was the Combined Arms' Team. This concept integrated infantry, tank, artillery, and air units into a single formation. This formation stressed mobility, firepower, and shock-action. The Combined Arms' Team proved

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[13]John W. Wheeler-Bennett, The Nemesis of Power: The German Army in Politics 1918-1945, (London: MacMillan & Co. Ltd., 1953), 101.

[14]Addington, 29.

itself to be highly effective in fluid combat, and was the primary reason for the success of the Blitzkrieg. This concept revolutionized military thinking and since has been adopted by most modern armies of the world.

Hitler learned many lessons from the First World War. He knew the importance of restoring mobility to the battlefield; the need to keep the home-front placated during time of war; and the criticality of being prepared economically for war. In attempting to avoid many of the mistakes of the First World War, however, and yet prepare for any future conflict, Hitler subordinated "...the promises of social revolution contained in the 'immutable' Nazi program...to the task of rearmament."[15]

Like von Moltke's strategy, Blitzkrieg did not require total mobilization of the nation's economy or population. The economic support of the "Lightning War" was based on the stockpiling of needed supplies in advance; using captured resources to the maximum; and expanding industrial production (not facilities) in the homeland during time of war to meet the needs of the military. Consumer goods were not to be curtailed completely, but reduced in quantity for short periods of time. Unlike von Moltke's wars, the Blitzkrieg was designed to be supported

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[15]Raymond J. Sontag, A Broken Word 1919-1939, (New York: Harper and Row, 1971), 261-262.

by short, but intensive bursts of economic effort.[16]

Prior to both world wars German strategists failed accordingly to consider defeat of their primary strategy and plan. In both instances the Reich was neither industrially nor economically prepared to fight a protracted war. Unfortunately for the nation, both wars evolved into battles of production lasting over four years. In all fairness one could argue that Hitler was better prepared than Wilhelm II to fight a war of attrition. The Fuehrer made plans for the war industries to increase their production during periods of war; however, his error lay in not preparing contingency plans for complete mobilization of the economy and population. Possible failure of the Blitzkrieg had not been considered seriously. Again, optimism clouded prudent judgment.

The early successes of the Blitzkrieg in Poland, Denmark, Norway, the Low Countries, and France seemed to vindicate Hitler's economic policies. These victories obscured the need for any long range economic planning and the German economy "...was permitted to operate in a leisurely, semi-peacetime

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[16]Alan S. Milward, The German Economy at War, (London: Athlone Press, 1965), 7.

fashion..." until 1942.[17]

In terms of perspective on this problem, Hitler, like Wilhelm II, failed to recognize how warfare in the twentieth century had changed. Wallenstein's seventeenth-century theory of an army living off the land was no longer valid. Twentieth century armies could not fashion their own weapons in the field, nor produce their own munitions. Industrialization, advancements in technology, and mechanization had changed the very nature of warfare. Industrial capability became a limiting factor as well as an advantage.

A nation's ability to engage in aggressive, short wars was limited by an increasing number of defensive alliances formed for economic, as well as military, purposes. This resulted in more countries possibly becoming involved in any major conflict; and that, in turn, expanded the duration of war. When industrial nations are drawn into protracted wars, victory is determined not at the frontline but rather on the assemblyline. War in this century has evolved into combat between rival industrial complexes. The nation with the greatest economic resources and potential enjoys a growing

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[17]"Effects of Strategic Bombing on the German War Economy," United States Strategic Bombing Survey, (Washington, D.C.: U.S. Government Printing Office, 1945), 21.

advantage as each day of the war passes.[18]

With his war-machine stopped before Moscow in December 1941, Hitler had to face the problem of providing his military forces with the "sinews of war" to fight a war of attrition. Again, under fire, the German industry and economy had to be converted to a war-time footing. In order to accomplish this seemingly impossible task, Hitler appointed his personal friend and architect, Albert Speer, as Minister of Armaments and Munitions in February 1942.

In reorganizing the Reich's industrial base to support a war of attrition, Speer employed many of the techniques advocated by Rathenau during the First World War.[19] He expanded Rathenau's System and streamlined it to suit the needs of the times. By doing so, Speer accomplished miracles in production which enabled the Third Reich to sustain herself for almost four years against the combined economic might of Great Britain, the Soviet Union, and the United States.

Although Rathenau and Speer became the organizers of German war-production during the First and Second World wars

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[18]Gordon Wright, The Ordeal of Total War, (New York: Harper and Row, 1968), 44-45.

[19]Albert Speer, Inside the Third Reich, (New York: MacMillan Co., 1970), tr. by Richard and Clara Winston, 208.

respectively, Speer's job was exceedingly more difficult. Speer came to power three years after the war began, and he had to struggle with various members of the Nazi hierarchy to gain control over the economy. Hitler gave him economic authority in a piecemeal fashion, being very careful not to give Speer too much power. Bormann, the Party Secretary, fought many of Speer's policies because they infringed on the "powers" of the local Party officials (Gauleiters). Goering, second in power to Hitler, felt that Speer had too much power and fought to limit this threat to himself. Himmler, head of the S.S., was concerned with constructing his own industrial base; and competed with Speer for the available resources of the Reich and captured territories. These men, all struggling for more power, made Speer's job of gearing the economy for total war almost impossible. Only his dedication and organizational genius enabled h'- to overcome most of the stumbling blocks placed along his path.

When comparing the contributions of Rathenau and Speer, it is essential to examine the environment in which they worked. Of particular importance to this problem, is the attitude of the civilian population (the national will). As Ratheneu approached his task of converting the economy to a war-time footing, the German people still were flushed with the victories of the late nineteenth century. The Kaiser had convinced the

populace that the Reich's neighbors were conspiring against Germany. Consequently, when the Imperial Army crossed the border into Belgium on its way to France, the action had the support of the masses.

Speer, on the other hand, came to power after Germany's military strategy had been thwarted. Fortunately for Speer, the word "defeat" had not yet entered the people's mind. They considered the set-back before Moscow as being minor. A slight change in the military timetable was required--nothing more. By early 1943, however, German confidence began to wane and gradually transformed itself into determination and fear. These ingredients, the experience of defeat in the last war, and the Allies' call for the Reich's "unconditional surrender," drove the flagging national will back into Hitler's camp.

After the initial defeat of her military strategy, the Rathenau and Speer Systems of industrial war-production were key factors in Germany's ability to prolong both world wars. Both systems provide the strategist with invaluable lessons concerning the marshalling of a nation's limited natural and human resources in support of military and political objectives. These lessons are:

1. Industrial and economic planning must go hand-in-hand with strategical planning for the possibility of total war. In other words, plan for total war, and prepare a

productive base for total war, even if limited martial and industrial efforts for limited war are your objectives;

2. Centralized military and industrial elements are the key. Proper preparation and deployment of human and natural resources to fight and produce for total war are essential;

3. The nature of warfare in the twentieth century has changed. War today is characterized by battles between opposing industrial complexes. The nation that contemplates a defensive, or offensive, war must lay the proper economic and industrial foundation during times of peace. To do otherwise, especially in the nuclear age, is to court disaster; and

4. Industrial nations must continually be alert to identify men of rare organizational and administrative ability, and be prepared to tap this resource as necessary. Men like Rathenau and Speer, who demonstrate the vision to assess strategically and draw upon national strengths, while minimizing national weaknesses, enhance the industrial war-making capability of a nation.

CHAPTER I

GERMANY ON THE EVE OF WORLD WAR I

After the French defeat in the Franco-Prussian War of 1870-71, the German states united under Prussian leadership and became the Second German Empire. Recognizing the dangers inherent in rapid expansion, the German Chancellor, Otto von Bismarck (1862-1890), proposed consolidation and "Germanization" of the states and territories that comprised the Reich.[20] To stabilize Europe, Bismarck deliberately avoided destroying Austria-Hungary and France during the wars for unification. He believed that a balance of power system was necessary for the maintenance of peace. The Chancellor also believed that Germany had earned France's undying emnity as a result of the war. This belief became the cornerstone of Imperial diplomacy while Bismarck was in office.[21]

In attempting to circumvent the possibility of French revenge, Bismarck used his diplomatic skill to isolate France,

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[20]Bismarck's policy of "Germanization" was designed to foster and develop a sense of nationhood within the territorial limits of the new Reich. He wanted the people to consider themselves Germans as opposed to Saxons, Prussians, Bavarians, etc.

[21]Holborn, III, 234-236.

politically, from the other major powers of Europe. To accomplish this, the Imperial Chancellor employed a series of shifting alliances with the other Continental powers. By doing so, he was able to counter-balance changing political trends in Europe to the Reich's advantage and to keep France isolated. Austria-Hungary was used as a counterforce to Russian ambitions in the Balkans. Russia was used to counter Austria-Hungary's Polish ambitions. The alliance with Italy was designed to keep France isolated from a Continental ally and to insure German access to the Mediterranean. Friendly relations were maintained with England; again, primarily to isolate France. As complicated as Bismarck's Alliance System was it was successful in accomplishing its designed purpose and it did contribute to peace in Europe as long as the old "master" was at the helm.

Part of Germany's territorial acquisitions as a result of the Franco-Prussian War were Alsace and Lorraine. In addition to these two territories, France was required to pay the new Reich five millard francs as indemnities. These provinces became a thorn in the diplomatic relations between Germany and France, and were the focal point of France's desire for revenge. After the introduction of the Thomas and Gilchrist method of processing low-grade iron ore profitably, Alsace-Lorraine, with their iron ore resources, played a very important role in the rapid industrialization of the German Empire.

The introduction of the Thomas and Gilchrist method of steel production in Germany in the 1880's helped in laying the industrial foundation for the development of an arms' producing base. Additionally, the new steel-making process triggered an industrial boom, owing to the almost inexhaustible reserves of low-grade iron ore in Lorraine.[22] The impact of this boom was felt in most segments of German society and it resulted in the Reich becoming one of the leading industrial powers of the world by the First World War.

Industrialization was late in coming to Germany and it was characterized by three fairly distinct stages. The first stage involved the introduction of machines and the factory system of production during the first quarter of the nineteenth century. No great quantum jumps were recorded during this period; however, the Prussian Government committed itself to assisting in the development of industries. In 1821 it created the Institute of Trades (Gewerbe Institut) to spread technical knowledge and encourage experimentation in new methods. By subsidizing this program the Prussian government set a precedent which was followed for the remainder of the nineteenth and early twentieth centuries.[23]

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[22] J. H. Clapham, The Economic Development of France and Germany 1815-1914, (Cambridge: Cambridge University Press, 1968), 284.

[23] Ibid., 87.

The second stage of industrial development coincides with the rapid expansion of railroads after 1840.[24] This stage was of particular importance because it stimulated the growth of the steel, machinery, and transportation industries. A collateral effect of the increase in the number of railroads was the gradual shift of the population from rural to urban areas.

The final stage of German industrial growth prior to the First World War began after 1880. The growing density of rail lines of communication permitted businessmen to locate their factories pretty much where they wanted to. These planners were not restricted to locations that were abundant in natural resources. Again, the railroads were a key factor. They provided the major means of mobility for the shifting work force as well as material.[25]

In addition to the key role railroads played in the industrialization process in Germany, they were of particular importance in the formulation and execution of Imperial military strategy. The railroads were considered of such importance in Germany that they were nationalized in 1876. Prior to the

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[24]Holborn, III, 374.

[25]See Table 1 in Appendix for population distribution in Germany from 1871 to 1910.

government's takeover, approximately one-half of the 27,960 kilometers of track was in private hands. By 1912, of the 60,521 kilometers in operation, only 3,631 kilometers were privately owned.[26] Despite nationalization, the amount of track put into operation rose at significant proportions.[27]

The German Empire was particularly blessed in natural resources necessary for industrialization. She had bountiful reserves of coal and iron; as well as the minerals necessary for the development of a large chemical industry; and the lines of communications (railroads, highways, and canals) necessary to support developing industries. Paramount in industrialization is the iron and steel production. Without a significant iron and steel industry, the other industries of a nation suffer and are impeded in their progress. With the acquisition of Alsace and Lorraine, Germany was able to compete with the rest of the world in iron and steel production. By 1900 Germany became the leading steel producer in Europe. Ten short years later, the Reich's output of iron and steel exceeded the combined output of Great Britain and France.[28]

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[26]Stolper, 40-41.

[27]See Table 2 in Appendix for growth of German railroads from 1835 to 1915.

[28]Clapham, 285. Also see Table 3 in Appendix for comparison of iron and steel outputs for Great Britain, Germany, France, and Belgium.

Germany's ore deposits would have been of little use to her if she would not have had the means of processing them. At the heart of any industry, and especially iron and steel processing, is the need for energy. The primary source of energy during the period of European industrialization was coal. Ideally, these coal beds should be located within the nation's territorial borders to insure unrestricted access. In this respect, Imperial Germany was again very fortunate. She appeared to have almost limitless coal reserves dispersed throughout the country. The primary coal deposits were located in the Ruhr, the Saar basin, the Saxon basin, and in Silesia. The Reich's output in coal and lignite rose from 37,900,000 metric tons in 1871 to an unbelievable 279,000,000 metric tons in 1913. By 1913 Germany ranked second, behind Britain, in total coal production in Europe and she was challenging Great Britain for leadership in this field also.[29]

The rapid expansion of Germany's transportation, coal, and iron and steel industries were directly responsible for the development and growth of numerous other businesses. Of particular importance because of their future military and political roles was the development of the shipbuilding and machinery

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[29]Ibid., 281-283. Also see Table 4 in Appendix for comparison of coal outputs for Great Britain, Germany, France, and Belgium.

industries. Within the machinery industry the armaments' firms achieved a position of unprecedented heights.

The shipbuilding and marine-engine industries were located mainly at Hamburg, Bremen, and Stettin. These concerns played an important role in German history: industrially, politically, and militarily. Industrially, they provided a merchant fleet which carried raw materials to Germany and finished products to the rest of the world from the Reich. In her search for new sources of raw materials and markets, the Imperial government posed a potentially serious commercial threat to Great Britain.

From the military standpoint, the rapid growth of the German battle-fleet challenged Britain's domination of the seas. Admiral Alfred von Tirpitz, (1849-1930) Secretary of State for the Imperial Navy from 1897 to 1916, was the Reich's chief advocate for a strong navy. Like Mahan, von Tirpitz believed that an industrialized nation needed a strong navy to protect its interests. Tirpitz stated, "Without an industry protected by naval power we ceased to be a great continental power.... Without naval power Germany's status in the world remained that of a mollusc without a shell."[30] These arguments found a ready listener in Wilhelm II who was anxious to enter the arena of

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[30]Golo Mann, The History of Germany Since 1789,(New York: Frederick A. Praeger, 1968), tr. by Marian Jackson, 261.

world politics (Weltpolitiken).

In the political prospective, the growth of Germany's merchant-marine and battle fleets was perceived by Great Britain as a strategic threat to her position in the world. Efforts to have the Kaiser scale down his shipbuilding programs fell on deaf ears. Consequently, diplomatic relations between these two countries became very strained. An examination of the Reich's naval production program points out Britain's reason for alarm. The tonnage of German steam-powered vessels rose from 216,000 tons in 1880 to 724,000 tons in 1890. By 1900 this figure was 1,348,000 tons; rising to 2,397,000 tons by 1910.[31]

The machine and armaments industries grew at a rate comparable to the iron and steel industry. A study of the growth of German heavy industry reveals that they were used to: expand the railroads; construct a powerful merchant fleet; and to stimulate and expand the machinery and armaments' industries. Machinery and armaments' workers grew in number from 51,000 in 1861 to 356,000 in 1882, rising to 1,120,000 by 1907.[32] Products of the machinery industry constituted the bulk of German exports. The income realized from these exports

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[31]Clapham, 286.

[32]Stolper, 24.

provided Germany with the resources and capital necessary to continue her industrial expansion.

The chemical industry of Germany started its major expansion in the 1880's also. Initially, the chemical firms started out by making use of coal by-products and later shifted to dyestuffs and pharmaceuticals.[33] Qualitative achievements by Germany in these fields were particularly important because they stimulated the growth of the chemical industry. It is very difficult to compare Germany's chemical industry growth with the other European nations because of a lack of statistics. Within the Reich, however, while only employing 1.54 percent of the total work force in 1907, the chemical industry's contribution was significant to the expansion of both other industries and agriculture.[34]

The net result of Germany's accelerated industrial growth was that she became heavily dependent on other countries for raw materials and foodstuffs. By 1914 the state could only satisfy her own needs in coal, phosphates, and zinc. All other

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[33] W.F. Bruck, Social and Economic History of Germany from William II to Hitler 1888-1938, (Cardiff: Oxford University Press, 1938), 77.

[34] A.P. Usher, "Interpretations of Recent Economic Progress in German," American Historical Review, XXIII (July, 1918), 808-809. Also see Table 5 in Appendix for data on production of Stassfurt crude potassium salts in Germany 1861-1911.

raw materials had to be imported in varying quantities to support industrial production.[35]

Unique to the development and growth of German industries were the monopolies (cartels), and the banking system. The cartels were of minor importance in the nation prior to 1873; however, the depression of that year caused cartelization to become a way of life and survival for German industries. The basic goal of the monopoly was to insure its own survival in bad, as well as good, times. To accomplish its goal, the cartels were very active in restricting competition and stabilizing prices for their products. As industries and their associated cartels grew in size, they began to diversify their interests. Eventually, they attempted to gain control of the sources of raw materials they needed and to provide them at the same price to all members of the cartel. The next step was to gain control of the markets. Since the Imperial government considered unrestricted capitalism to be in the general interest of both the state and the people, capture of the markets in the Reich was simple. The big cartels were found mostly in the heavy industries such as coal; iron, and steel; and chemicals.[36]

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[35]Fritz Sternberg, Germany and a Lightning War, (London: Faber and Faber, 1938), tr. by Edward Fitzgerald, 148-149.

[36]Holborn, III, 384-385.

By 1914 the cartels of Germany had interests and holdings all over the world. Yet, the cartels still only accounted for a very small percentage of German business and industry.

The banking system during the nineteenth and early twentieth centuries played a key role in the industrialization of Germany. The banks in this country differed from the banks of Great Britain and the United States in that they were a combination of commercial banks, investment banks, and investment trusts backed by a strong central bank. The German banks were designed from their founding to be institutions to finance industry. Specific German banks came to be associated with specific industries or geographical areas. It was not uncommon to have industrialists as members of the banks' board of directors and vice versa. Banks with similar interests began to merge in the same manner industrialists had formed cartels. This permitted the banks to increase their investments across the board and by doing so stimulated the growth and further cartelization of industry. If the Reich would have had to rely on foreign capital for the development of her industrial base, she would not have made the progress she recorded in the period prior to World War I.[37]

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[37]Stolper, 25-29.

The formation, growth, and increasing influence of the cartels involved with heavy industry and their increasing association with government programs, particularly defense programs, marked the beginning of a large military-industrial complex in Germany. This can best be demonstrated by an examination of the shipbuilding programs of Wilhelm II. Impressed with her rising stature and power in world politics, the Empire was caught up in the resurgence of imperialism during the last decade of the nineteenth century. Nationalist and special interest groups, such as the Pan-German Union and the Navy League, respectively, gained in strength and influence throughout the country. These organizations, as well as many political and military leaders, supported the concept of Germany as a world empire (Weltreich). To achieve this goal, these groups demanded territorial acquisitions in keeping with the spirit of the times. These demands were partially satisfied by the lease on Kiaochow on the Chinese mainland and the purchase of the Caroline and Mariana Islands in 1898; and the acquisition of part of the Samoan Islands in 1899.[38]

In order to protect these far-flung assets, von Tirpitz argued that the Reich needed a powerful navy. In these

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[38]Mann, 263.

arguments he was supported by many nationalist and special interests groups, industrialists, most of the middle class (professionals and white-collar workers), and many scholars.[39] A special campaign in support of the shipbuilding program in the newspapers owned by the industrialists convinced the people and the Imperial Parliament (Reichstag) that this program would provide more jobs; stimulate business; assist heavy industry; increase the nation's military potential; and assist Germany in becoming a world empire. Consequently, the naval program was funded by the Reichstag.[40]

Another example of the close cooperation between the military and heavy industry in Germany occurred in 1913. When invited by the Turkish government to assist in the reorganization of their army, the German military mission used this opportunity to sell the Turks new weapons and equipment made by Krupp.[41] By being continually on the alert for armament

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[39]Mann, 262. Max Weber, the noted economist, stated in support of the shipbuilding program: "Only complete political dishonesty and naive optimism can fail to recognise that, after a period of peaceful competition, the inevitable urge of all nations with bourgeois societies to expand their trade must now once more lead to a situation in which power alone will have a decisive influence on the extent to which individual nations will share in the economic control of the world, and thus determine the economic prospects of their peoples and of their workers in particular."

[40]Ibid., 261-263.

[41]A.J.P. Taylor, The Struggle for Mastery in Europe 1848-1918, (Oxford: Clarendon Press, 1969), 372.

contracts throughout the world, the German Army and Navy united with heavy industry to form a tight partnership. Industry devoted a great deal of its resources and technology to the development of more modern and lethal weapons for their partners. In this manner the military and industrial establishments in the Reich combined their powers to win the arms' race that was taking place in Europe from 1893 until 1914.

The rapid growth of German industry was accompanied by a change in perception by Wilhelm II (1888-1918), as to Germany's relative standing in the world. The German Empire became an exporter of finished products and an importer of raw materials. Consequently, German interests shifted beyond their national frontiers in search of new markets and sources of raw materials.[42] This search brought the Imperial government into conflict with England, which in turn kindled the desire for additional naval power. If the nation was to be a Weltreich, she had to be able to protect her interests anywhere in the world.

Bismarck long-ago recognized the possible effect that industrialization would have on the existing social and political order; and he used authoritarian methods to keep it under control. A staunch conservative by nature, Bismarck believed in a strong authoritarian type of government for Germany. He

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[42] Bruck, 73.

believed that the key to the Reich's growth was in a political and economic program that satisfied the needs of mostly the well-to-do. As a result of his beliefs, the Chancellor adjusted the economic policies of the state to meet the wishes of the politically strongest classes in Germany.[43] In implementing his program, Bismarck found it necessary once in a while to take a step backwards. To unify the country he made some concessions to the liberals, especially in the area of social legislation. This, however, did not change his basic attitude towards the liberal influences in the German society. Bismarck considered the shifts in population from the farms and villages to industrial centers dangerous to the existing social order. His perception was exacerbated by the rapid growth and influence of the trade unions. This resulted from the increasing number of workers employed in the industrial sector of the economy. As the workers gained in strength and influence, they demanded additional social legislation from the government, again posing a socialist threat to the status quo in German society. Bismarck considered these elements to be contrary to the best interests of the Reich, if not the harbingers of doom. The Chancellor, therefore, exerted his influence through legislation,

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[43]Holborn, III, 161.

and by other means, to stem any unfavorable tide of change.[44]

On March 18, 1890, after a heated conflict with the emperor over ministerial access to the Kaiser, Bismarck resigned his office. General Leo von Caprivi (1831-1899), was appointed to succeed Bismarck. An honest man of sober judgment, Caprivi demonstrated little political imagination during his term of office,[45] which caused a shift in the state balance after Bismarck's departure.

The period after Bismarck's resignation was marked by the continued acceleration in the growth of banking and industry. Most Germans during the 1890's felt as though the powers of the Reich were limitless; and that she should now take her "rightful" place along side the other industrial powers of the world.[46]

Caught up in the aura of newly acquired power, Wilhelm II entered the arena of world politics in the late 1890's. Without a Bismarck to guide him, the Kaiser made many mistakes as a result of his overwhelming desire to compete aggressively with Great Britain, France, and Russia as a world power.

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[44]Bruck, 70.

[45]Holborn, 302-303.

[46]Taylor, 372.

Germany became involved in one world crisis after another because of the Emperor's aggressive attitude. The Reich's neighbors became alarmed. No statesman could predict with any degree of assurance what action Germany would take in any given situation.

This uncertainty over Germany led to the formation of alliances primarily directed against her. Germany was encircled by unfriendly nations; however, she did "...nothing to prevent ...being encircled, convinced that (she) would always remain master of the situation...."[47]

Wilhelm II failed to see the significance of renewing the Reinsurance Treaty with Russia. This marked the beginning of the end for Bismarck's system of alliances. With this breakdown, France was no longer isolated on the Continent. A major power was now temporarily free to shift its weight. France took advantage of this situation. Subsequent actions led to the Franco-Russian Alliance of 1892-93. This single act damned Germany to the possibility of fighting the two-front war that Frederick the Great warned against long ago.[48] The emergence of new, fairly rigid political and military alignments in Europe after 1893, had a significant impact on the strategic

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[47] Mann, 288.

[48] Holborn, III, 304.

thinking and planning of the German General Staff.

In 1897 Wilhelm II developed plans for a shipbuilding program to be launched in 1900 which would have challenged seriously British control of the seas and insured the Reich's emergence as a world power.[49] Not only did Great Britain view this development as a threat to her national survival in economic terms, but the military danger became more serious every year. Britain was dependent upon control of the seas for the unrestricted import of raw materials and foodstuffs, and for the export of finished products. Any German expansion of trade outside of Europe would put the Reich into competition with Britain for the world's markets and sources of raw materials. Having assessed Germany's industrial and shipbuilding capabilities, Great Britain correctly considered that nation a grave threat to her economy.

By attempting to depose Britain as "master of the seas," as well as searching for colonies abroad, the Kaiser and von Tirpitz succeeded in pushing Great Britain into alliances with France (1904) and with Russia (1907). Europe was now divided into two armed camps: the Triple Entente (Great Britain, France, and Russia); and the Triple Alliance (Germany, Austria-Hungary, and Italy). No major European power was free to

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[49]Taylor, 373.

shift its weight during times of crisis.[50]

By the turn of the century European armies were essentially armies of mobilization. They consisted of a relatively small nucleus of professional soldiers that could expand much larger in times of war with well-trained reserve forces. The implementation of all contingency plans was based, therefore, on the time required to mobilize and deploy the reserves. Mobilization of reserves came to be accepted by European strategists as tantamount to a declaration of war. "It was the object of German strategy to prevent the enemy from enjoying this period of 'war in peacetime'; so Germany, and Germany alone, thought that it must translate the equation of mobilization with war into reality as quickly as possible."[51] Surrounded by her enemies, while constrained in possessing relatively finite resources, the Reich believed that she must have first-strike capability. This philosophy ushered in the concept of preemptive wars in the twentieth century.

Bearing this in mind German strategists, such as Count Alfred von Schlieffen (1833-1913), Chief of the General Staff from 1891 to 1906, believed that the Imperial Army's success on

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[50] Mann, 261 and 266.

[51] Ibid., 296.

the battlefield depended upon the rapid mobilization and employment of concentrated forces at the decisive place and time. This axiom took on added significance in 1893 with the conclusion of the Franco-Russian Alliance. The two-front war was accepted as unavoidable and plans for its prosecution had to be developed. Contrary to von Moltke's plan of 1879, which envisioned a defense against France in the West and an offensive against Russia in the East,[52] von Schlieffen considered France to be the greatest threat to the Reich and developed his plan accordingly. Von Schlieffen's plan entailed the invasion of France through neutral Dutch and Belgian territory.[53]

In developing his plan von Schleiffen considered the time required for mobilization in France and Russia as being an overriding factor in determining who to strike first. The plan appeared to be rational, simple, and sound. After adoption, the General Staff considered the von Schlieffen Plan to be a

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[52]Goerlitz, 100-101.

[53]Von Schlieffen's plan for victory against France called for an overwhelmingly strong right wing to attack through Holland and Belgium to avoid the French fortifications. The left wing of the German Army, consisting of minimum forces, was to contain the French offensive and delay back to the Rhine, if necessary. The right wing would then sweep South of Paris, then turn East and destroy the French Army from the rear. Victory was to be achieved within six weeks. The bulk of the German Army was then to be shifted to the East and employed against Russia. See Montross, 685-686.

panacea. They completely disregarded the political implications of violating neutral territory. It was a matter of military necessity.

Adherence to the von Schlieffen Plan practically guaranteed that if Germany went to war with Russia, she would automatically violate Belgian neutrality and be at war with France and Great Britain as well. Because of the various military clauses in the Triple Entente's alliances, no serious contingency plans were developed for a war with any of her perceived enemies on a separate basis. Germany took these military clauses very seriously, perhaps more seriously than the Entente partners did. Because of the von Schlieffen Plan, it simply became a choice of all or nothing. There was no flexibility, no room for adjustment at the last minute, owing to the very detailed nature of the mobilization timetables.

Having been successful in their past wars, the General Staff assumed an exaggerated role in the realm of foreign policy. They were permitted to prepare contingency plans without consulting the political leaders of the country. These plans were then submitted to the civilian leadership for comment. Because of their fantastic faith in the General Staff, these leaders usually approved the military plans in a "rubber-stamp" fashion. This process exposed some of the glaring shortcomings of the

German governmental system.[54] No political action was taken to contest the invasion of Holland and Belgium under the Schlieffen Plan.

In the economic sphere, no detailed preparations were made to sustain the army in the event the Schlieffen strategy failed. The war was to be fought with existing supplies, and owing to its predicted short duration, there was no need to mobilize the economy. It was hoped that the war against France and Russia would take on the character of the Franco-Prussian War of 1870-71. This would mean little, if any, disruption to the economic life of the nation.[55]

Unfortunately for the Reich, little consideration was given to the vast quantities of munitions necessary to feed rapid-firing machineguns and artillery pieces on the modern battlefield over a long period of time. The effects of a possible blockade, limiting or cutting off altogether imports of critical raw materials and foodstuffs, had not been anticipated. The possibility of failure apparently was never seriously considered by the General Staff. The Kaiser did promise, "We shall be home again by Christmas...."[56] and everyone believed

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[54]Holborn, III, 427.

[55]Sternberg, 140.

[56]Ibid., 140.

it. Faulty as these assumptions were, nevertheless these ideas comprised the basic thinking that influenced Germany's economic and industrial planning for war.

In examining a nation's capability to wage war, a very important, somewhat unquantifiable, element of power must be considered by the strategist: national will. National will has been defined as the "...sum total of a nation's motivational capabilities."[57] In order to assess the motivational capabilities of a nation, two major areas of consideration must be scrutinized: sociological factors and psychological factors. Elements that contribute to sociological factors are: culture; standard of living; social institutions; race; health; and the quality of society, government, and leadership. Psychological factors are comprised of: belief systems; national images; and the national character, style, and morale.[58]

In attempting to superimpose the model for assessing national will in the case of Germany before World War I, extreme caution must be exercised to avoid oversimplifications and

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[57]United States Army Command and General Staff College, Guidelines for Analysis: Elements of Power. (Fort Leavenworth, Kansas: 1974), R5109-1, P1-AS-3-8.

[58]Ibid., P1-AS-3-8, 9 and 10.

generalizations. Prior to 1871 and the formation of the Second Reich, the middle-classes of the various German states were caught up in the Liberal movement that was sweeping through Europe. The majority of the people were interested in their own particular situations and ways of life. The spirit of nationalism had not yet filtered down to the "man on the street." For the most part the various military establishments of the German states were held in very low esteem. The wealthy and educated took every opportunity to"...buy their way out..." of military service.[59]

With the victories of Prussian arms in the Wars for German Unification, culminating in the establishment of the Second Empire, a very dramatic change in attitude took place in the German middle-classes. Intoxicated with pride at the overwhelming successes achieved during the wars, the middle-class came to look "...on their army as a priceless national treasure. Long-nurtured resentment of Prussian militarism and drill-ground spit and polish paled and vanished...."[60] The

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[59]Gerhard Ritter, The Sword and the Scepter: The Problem of Militarism in Germany, (4 vols.; Coral Gables: University of Miami Press, 1966-70), tr. by Heinz Nordon, II, 96.

[60]Ibid., 101.

emerging nationalistic spirit in Germany was accelerated not only by the swift industrial growth of the nation, but also in the equally-rapid militarization of the middle-class. The latter was achieved by way of the reserve officer program.[61]

Through the War of 1870-71 there were very few reserve officers serving in the armies of the German states. Officers traditionally came from the landed gentry (Junkers) and the aristocracy. After 1871, however, German Army reforms permitted the expansion of a program for commissioning reserve officers. The reserve officers came from predominately petite-bourgeois backgrounds. The reserve officer program expanded very rapidly, and the reserve commission became a sought-after "status" symbol in German society. The bourgeoisie found that possession of a reserve commission opened many doors to advancement that were previously closed to them.[62] By 1913 over 70 percent of the German officer corps as a whole, and 48 percent of the colonels and generals, were of middle-class backgrounds.[63]

The militarization of the middle-class, coupled with its growing affluence, as a result of industrialization, and increased social mobility, enabled this class to determine

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[61]Ibid., 101-103.

[62]Ritter, II, 101-102.

[63]Craig, 235.

the culture of Germany. The bourgeoisie admired and recognized the preeminence of the Junkers and aspired to join their ranks.[64] The Junkers had always led the way in Prussia in service to the state, both in politics and the Army. As a part of the changing social values, patriotism and nationalism took their places at the top of the middle-class values.

The phenomenal rise to industrial power, combined with the memory of past victories of Prussian arms (1864-1871), blinded the German people and the government in assessing the true limits of their political and military strength. As a result, both the people and governmental leaders were embittered by, and contemptuous of, the encirclement by the Triple Entente. Both saw this as a threat to their survival and they were willing to meet this challenge with arms, if necessary. Austria-Hungary's partnership in the Triple Alliance gave the people and the government, as well as the Army, some measure of confidence.

On June 28, 1914, Serbian fanatics assassinated the heir to the Austrian throne, Archduke Franz Ferdinand, in the little town of Sarajevo.[65] This was followed by a month of

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[64]Holborn, III, 389.

[65]A.J.P. Taylor, From Sarajevo to Potsdam, (London: Harcourt, Brace & World, Inc., 1965), 20.

building tensions and ultimatums. Serbia, supported by Russia, became the fuse that ignited the bomb which exploded as the First World War. Germany's support of her ally, Austria-Hungary, encouraged Franz Josef to make demands on the Serbs that he knew would be refused. The Serbs, assured of Russian support, could well afford to refuse fulfilling Austrian demands.

After threats, counter-threats, and proposed mediation failed to resolve the crisis, the Germans received word of Russian mobilization on July 29, 1914. Two days later the East Prussian-Russian frontier was closed by the Czar; and notices of general mobilization were posted. After further attempts failed to convince the Russians to withdraw the order of mobilization, the German government ordered mobilization of her forces on August 1, 1914. Germany was the last of the Continental powers to order mobilization. On August 4, 1914, implementation of the Schlieffen Plan was ordered. The invasion of France was about to begin.[66]

With the will of the people behind them, the German Government and the General Staff were confident of swift victory as they marched to war in August 1914. What nation could

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[66]Goerlitz, 152-155.

afford to go to war without the full support of her population?[67] The German people entered World War I in a jubilant manner, convinced that they would win the war quickly and be home for Christmas, as the Kaiser promised.

Within a week after the outbreak of the war, Walther Rathenau, a German industrialist, fearing the war would be protracted, went to the War Ministry to determine the status of raw materials in Germany. After determining the Reich's available supply of raw materials would only support her war-machine for approximately six months, Rathenau made suggestions and recommendations for controlling the critical materials. The War Minister, von Falkenhayn, quickly grasped the soundness of Rathenau's arguments; and appointed him to organize and head a War Raw Materials Bureau within the framework of the War Ministry.

Three weeks later all of Germany's hopes for a quick, decisive victory over France were smashed at the First Battle of the Marne. Germany was now faced with the problem of fighting a modern, long-term war of attrition. By failing to adequately consider this possibility, Germany found herself ill-prepared, economically and industrially, for the war ahead

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[67]Montross, 633.

of her. The emergence of Walther Rathenau, soon to become Germany's organizer for victory, did not change the tide in favor of the Reich, but it was instrumental in delaying the eventual outcome for four years.

CHAPTER II

THE RATHENAU SYSTEM IN WORLD WAR I

One of the first men of the twentieth century to recognize the changing character of warfare was the German industrialist Walther Rathenau. Rathenau's industrial background enabled him to understand the total impact of technology on military operations. He realized that the basis for political and military decision had shifted from competing military forces on the battlefield to competing industrial complexes behind the front line. Rathenau believed that economics and technology constituted the essence of military and political power.[68]

In Rathenau's view, the nation with the greatest industrial potential and with free access to resources had a distinct military advantage. It could make maximum use of the economic element of power. If, on the other hand, the resources to feed industry were unavailable or denied, the advantages accrued by having a well developed industrial base were negated. Because of his rare insight and understanding of this principle, Walther Rathenau became the Reich's economic and industrial "Carnot" of the First World War.

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[68]Eric Kollman, "Walther Rathenau and German Foreign Policy Thoughts and Actions," Journal of Modern History, XXIV (1952), 127.

Walther Rathenau was born into modest, Jewish, middle-class surroundings in Berlin on September 29, 1867. He was just a child when Bismarck forged the Empire and he grew up during the industrial boom which followed the uniting of the German states in 1871. During this period of industrial growth, young Walther's father, Emil Rathenau, an early pioneer in German industry, devoted himself almost entirely to his engineering efforts and innovations. The changing moods of his father during periods of stress had a deep effect on young Rathenau. He interpreted his father's moods as indifference and this wounded the boy's self-esteem.[69]

When Walther was fourteen, his father secured the Edison patents and founded the German Edison Company for Applied Electricity (Deutsche Edison-Gesellschaft fur angewandte Elektrizitat). This company was the precursor to the A.E.G. It was through this company that Emil Rathenau developed techniques which made mass production in the electrical industry a reality. From his father Walther learned the benefits of having centralized control over economic units.[70] The elder Rathenau's massive development of the electrical industry was in part responsible

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[69]Count Harry Kessler, Walther Rathenau: His Life and Work, (New York: Howard Fertig, 1969), 10.

[70]Ibid., 12-13.

for the rapid expansion of other enterprises in Germany.

Repulsed by his father's addiction to his work, Walther became completely devoted to his mother. To him, she represented the "...embodiment of the ideal world of Goethe and of the great German Romantics...."[71] Impressed with the changing world around him, besides being subjected to the contradictory, but strong, influences of his parents, young Rathenau was afflicted with a sort of dual personality. On one hand he was a hardworking, efficient administrator, while at the same time he was a romantic literati. This dual-value system remained with him till the end.

At the age of seventeen Rathenau entered the University in Berlin, and later Strassburg. He studied chemistry, mathematics, physical science, and philosophy. Later Walther specialized in electro-chemistry,a relatively new field. After spending several years working at his profession in the small town of Bitterfeld,[72] Rathenau decided to retire and devote himself to the pursuit of the other interest in his life--literature. As a young boy he became an avid reader, a trait that remained with him the rest of his life. Rathenau was

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[71] Ibid., 18.

[72] Kessler, 21.

also driven by the desire to write and share his opinions and philosophies with others. In answering his literary calling, he authored numerous articles, monographs, and books dealing mostly with the social and economic order in Europe.[73]

Rathenau's retirement from the business world was short-lived. He accepted an invitation from his father to join the staff of A.E.G. Young Rathenau soon succeeded his father as the head of the company, which had become one of Germany's largest and most important cartels. In addition to running the firm, Rathenau was on the board of at least seventy other companies and belonged to over 300 societies or associations.[74]

One of the crosses that Rathenau had to bear was that of his Jewish ancestry. Many of his early writings attest to this. In an article in Die Zukunft, in 1897, he wrote: "Remarkable sight! In the middle of German life a strange and isolated tribe, glitteringly and ostentatiously decked out, hot-bloodedly mobile of expression. An Asiatic horde on Brandenburg sand...not a living part of the nation, but a foreign body in it."[75] Rathenau went on to advise these foreigners to become "Jews of German character" as opposed to "imitation

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[73] Felix, 639-640.

[74] "A German View of the Problems of Peace," The American Review of Reviews, LVI (August,1917), 200.

[75] Felix, 639.

Teutons."[76] Despite his Jewish background, Rathenau became a staunch nationalist and urged others to do likewise. Unfortunately, he was never able to outgrow his inferiority complex.[77]

After the outbreak of war in August 1914, Rathenau and one of his associates, Richard von Moellendorff, were quick to realize the technological implications involved in supporting a large war-machine for an extended period of time. They understood the industrial process in Germany and knew exactly how dependent the nation was on other countries for raw materials. Based on the existing stock of critical materials available to A.E.G., they did not believe that the Reich could sustain herself for long if her sources of supply were denied by a blockade. Encouraged by von Moellendorff, Rathenau went directly to the War Ministry a few days after the war began and suggested that a survey be conducted to determine the status of raw materials currently available in Germany.[78]

Based on Rathenau's suggestion a survey was conducted.

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[76] Ibid., 639.

[77] Arnold Brecht, "Walther Rathenau and the German People," The Journal of Politics, X (February, 1948), 27.

[78] Felix, 641.

Its findings indicated that Germany only had enough raw materials for a half-year of war.[79] Rathenau explained that being practically land-locked, Germany would be very vulnerable to a blockade. He pointed out that if a blockade were imposed by Britain while the war lasted longer than expected, it would be almost impossible for Germany to keep her army supplied.

Rathenau's arguments impressed the War Ministry officials. He was asked to present his ideas to the War Minister, Erich von Falkenhayn. Von Falkenhayn recognized the validity of Rathenau's arguments and immediately prevailed upon him to organize and head a War Raw Materials Bureau (Kriegs Rohstoffabteilung, or K.R.A.) within the War Ministry.[80]

This was a monumental step on von Falkenhayn's part, for this was the first time that a civilian, and a Jew at that, was appointed to a position of such importance within the War Ministry.[81] It was through the K.R.A. that German industry was provided with the indispensable raw materials necessary to keep the Army in the war. The K.R.A. was Rathenau's major

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[79]Feldman, 45.

[80]Stolper, 65.

[81]Emil Ludwig, Nine Etched From Life, (New York: McBride and Company, 1934), 160.

contribution to the German war effort; and its success formed the basis for the establishment of an Economic General Staff (Wirtschaftlicher Generalstab) as predicted by Rathenau in 1915.[82] The Economic General Staff became a very important element in subsequent development of the German economy through the Third Reich.

In organizing the K.R.A. Rathenau had many problems. His first and most immediate problem was personnel. He brought von Moellendorff and Professor Klingenberg with him from the A.E.G. The War Ministry provided a retired colonel to serve as co-director and an experienced secretary. From this humble beginning, Rathenau began the monumental task of reorganizing Germany's economy.[83]

With his small staff Rathenau began assessing the quantity of raw materials and productive facilities available in the Reich. He found this was practically impossible to do in the time available to him. By developing the hypothesis that the store of supplies available to any large group of industries would be equal to the supplies available to the

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[82]Walther Rathenau, "Germany's Provisions for Raw Materials," Fall of the German Empire, (Stanford University: Hoover War Library Publications--No. 2, 1932), 90.

[83]Rathenau, 79.

nation, Rathenau was able, with astonishing accuracy, to quantify the raw materials problem.[84]

Once the quantity of critical materials was known, Rathenau had to determine how he could best control and allocate them. Paramount in his thinking was that the needs of the civilian population had to be subordinated to the needs of the army and state. Keeping this in mind he implemented four measures which formed the foundation of his system; and the basis on which the German economy was restructured. First, coercive measures were adopted regarding the use of all raw materials in the country.[85] No material was to be used for luxury items, or for anything else that was not absolutely needed for the war effort. Second, "...raw materials to supplement the German stocks would have to be procured from foreign countries, by force if need be."[86] Third, that anything indispensable and not available from outside sources

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[84]Ibid., 79.

[85]See Table 6 in Appendix for a listing of the Thirty Raw Materials most vital in war. Harry N. Holmes, Strategic Materials and National Strength, (New York: MacMillan Co., 1943), 9-11.

[86]Albrecht Mendelssohn Bartholdy, The War and German Society, (New Haven: Yale University Press, 1937), 229. The second measure had been deleted from the text of the printed edition of Rathenau's speech on the K.R.A. by military censors. It is obvious that the censors did not want to publicize the means to be used to obtain raw materials, if necessary.

would have to be manufactured in Germany. To accomplish this, new methods of manufacture had to be developed in many instances. Finally, measures had to be instituted to substitute easily procurable raw materials for those more difficult to obtain. An example of this was the use of steel, as opposed to brass, in the manufacture of cartridge cases.[87]

Rathenau believed that some compulsion would be necessary to institute his economic programs; however, he only wanted to use minimum force. To this end, Rathenau placed great reliance on the nationalistic attitudes of the industrialist and brought many of them into his organization as honorary "dollar-a-year-men." In this manner he was able to achieve to a great degree as much industrial self-responsibility as was possible. The addition of these financial and industrial leaders to the staff of the K.R.A. meant that men who were intimately familiar with industry's requirements were now tasked with providing and controlling the materials they needed for production. For all practical purposes, these experts became instruments of national policy.[88]

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[87] Rathenau, 80-81.

[88] Feldman, 48.

To gain control over the available supplies, the K.R.A. instituted a modified system of requisitioning. Raw materials were not considered in the light of ownership,but rather in terms of right of disposal and this was closely regulated. This permitted distribution of scarce raw materials to firms producing goods essential to the war effort on the basis of established priorities.[89]

The primary means Rathenau used to establish policy, set priorities, and control the distribution of raw materials peculiar to specific industries was through a series of organizations he established. These organizations were known as War Industries Boards (Kriegswirtschafts-Gesellschaften). These Boards, or War Companies, as they later became known, served a threefold capacity: a) as representative consultants to advise the government on their trades; b) as government executive agents within their trades; and c) as autonomous bodies in spheres not regulated by the government.[90]

The Kriegswirtschafts-Gesellschaften were formed as joint-stock or limited-liability companies, but differed from

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[89]Ibid., 48.

[90]Brecht, 42.

genuine private companies owing to the governmental functions assigned to them. The War Companies were formed as needed within the framework of the K.R.A.; and they exercised control over the raw materials allocated to their industry. As autonomous organs of the industries thus represented, they acted "...under public control and for the public benefit."[91]

Governmental control during the first two years of war was confined to the following measures:

1. Raw materials, as they became scarce, were sequestrated and the producers were compelled to sell their product to the war companies;

2. Maximum prices were decreed; and

3. Raw materials were resold to processors for prescribed purposes, and distribution to manufacturers was according to priorities assigned to their products.[92]

There was actually little legal basis for Rathenau's system; especially his method of gaining control over available raw materials. The legality of his system was not challenged initially because of the enthusiasm displayed by the population and industry during the first months of the war. This espirit enabled Rathenau to accomplish the required centralization of control so necessary in his system.

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[91] Stolper, 66.

[92] Ibid., 66.

The major legal problem that Rathenau encountered was the Law of Seige,[93] which permitted the Deputy Commanding Generals of the various military districts to circumvent his control and pursue independent and inconsistent policies.[94] This stumbling-block was eliminated by the Bundesrat decree of July 24, 1915, which officially centralized the control of raw materials in the War Ministry.[95]

Rathenau's system of coordinating and controlling the efforts of industry through the War Companies proved to be most effective. The War Companies grew in number during the war and by the end of the war they controlled most aspects of the German economy. After the initial enthusiasm of the population and industry died down, Rathenau began to experience much opposition to his system. Effective as it was in providing the necessary resources for industry, there was a tendency to object to governmental control over raw materials. This was especially true in so far as it concerned the smaller industries and the manufacturers of consumer goods that were determined

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[93]Rathenau, 81. In his speech before the German Society, Rathenau stated, "Our laws regulating the economic and industrial life in war time had hardly been changed since the time of Frederick theGreat. According to the letter of the law, ...if a captain of cavalry comes into a village, he may ask the chief magistrate...for barley, and if the magistrate should raise difficulties, he under certain conditions may take the barley himself. That...is about all the law that we found."

[94]Feldman, 48.

[95]Ibid., 48.

not to be critical to the war effort. These industries had the option of closing down or retooling to produce war goods.

Another area of discontent voiced by the industrialists was that some members of the War Companies attempted to use these corporations for their own personal advantage. While in office Rathenau was able to control this to some extent. When the Imperial Office of the Interior stated that nothing could be done to combat rising prices during the latter part of 1914, Rathenau took it upon himself to arrange price ceilings with the industrialists. The first price ceilings were established in December, 1914.[96]

Eight months after Rathenau accepted von Falkenhayn's appointment as head of the K.R.A., he tendered his resignation. During this relatively short period, he established the administrative foundation which could oversee the procurement and allocation of critical raw materials needed to sustain and increase war production. By limiting allocation of these materials to war-essential industries, Rathenau was responsible for the massive shift of manufacturing capability from consumer goods to the war effort. His efforts insured that Germany would not suffer immediate defeat owing to a lack of industrial wherewithall.

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[96]Feldman, 50.

The War Companies, which later caused so much controversy, were good examples of Rathenau's inventive genius. The companies, coupled with the remainder of his system, were so effective that even the United States, Great Britain, and France resorted to their use. Considering the Allies' relatively free access to the raw materials of the world and their strong "democratic"ideals, their adoption of an authoritarian economic system poses an interesting dichotomy. It can only be assumed that the Allies also found that modern industrial warfare required centralization and stringent controls over all aspects of the economy.

Available evidence does not indicate the reason for Rathenau's resignation. Undoubtedly, he made many enemies in his struggle to centralize the economy. These enemies included the political and military bureaucracy, who were embarrassed by their lack of adequate contingency planning; the Deputy Commanding Generals, whose power he was usurping in the area of raw materials; the industrialists, who began to object to governmental controls imposed upon them; and the population, who was denied in varying degrees access to certain consumer and luxury items. In a letter to a friend, Emil Ludwig, Rathenau wrote, "That I a civilian and a Jew have rendered the state a service of my own accord is something that neither of the two parties concerned can forgive. I believe this

attitude will continue to the end of my days."[97] This statement seems to confirm that Rathenau was subjected to a growing resentment during the conduct of his business at the War Ministry.

Harry Kessler, Rathenau's biographer, has stated that there was never any clear indication that Rathenau planned to stay with the K.R.A. any longer than it took to organize the bureau. The question is academic. Rathenau resigned after he set up the machinery and put it into motion. Continuity of effort was maintained within the K.R.A. in that Rathenau was permitted to choose his successor. He selected Lieutenant Colonel Koeth, a co-worker in the War Ministry for the job. Koeth found Rathenau's system very efficient and no major changes were made in it.[98]

By providing the army with the means to sustain itself and stabilize the front lines, the Rathenau system saved Germany from becoming a battleground and sharing the fate of Northern France. Additionally, this system of war-production enabled the Reich to resist the combined economic and military forces of her enemies for four years.[99] The K.R.A. proved

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[97]Ludwig, 160.

[98]Kessler, 182.

[98]Harvey A. DeWeerd, "Churchill, Lloyd George, Clemenceau: The Emergence of the Civilian." Makers of Modern Strategy, (Princeton: Princeton University Press, 1971), ed. Edward Mead Earle, 291.

that a country economically unprepared for war need not suffer immediate defeat if it recognizes its inadequacies soon enough and takes action to overcome them. This is not to say that that country will necessarily win the war. If not overrun by an economically and militarily superior force, the duration of the war can be extended and the victor will be determined by production capability and national will.

After Rathenau's departure, the K.R.A. continued to expand. By the end of the First World War it occupied over a city block of offices and was large enough to be a separate ministry. Remaining a branch of the War Ministry, the K.R.A.'s influence was felt in all areas of the economy.

In searching for an historical precedent to the Rathenau system, an identical system could not be found. The closest war-time economic system that vaguely resembled Rathenau's was that of Lazare Carnot's during the French Revolution and the Napoleonic Wars. Carnot, before Rathenau, became the organizer of his country's economy during war. Much of the success enjoyed by Napoleon can be attributed to this brilliant administrator. To accomplish the tasks before him, Carnot found that centralized control of the economy was essential. It was his belief that all of the resources of the nation, human and material, must be directed to winning the war. In this vein Carnot became the "Godfather" of modern war-production techniques.

Unlike Rathenau, Carnot concerned himself mainly with plans for campaigns. He exercised centralized control over the economy through two colleagues, Prieur and Lindet. Carnot charged Prieur with the responsibility for providing the arms and ammunitions necessary to fight the war. Prieur was given the necessary authority to accomplish this task. His job can be equated to that of a Minister of Armaments and Munitions. The remainder of the economy was entrusted to Lindet. Lindet was concerned with providing the army with food and transport, in addition to supervising the commercial and agricultural affairs of the whole nation.[100] His responsibilities equate to those functions performed by modern Ministers of Agriculture, Transportation, Interior, Finance, etc.

Under Rathenau's system there was no separation of arms and munitions from the rest of the economy. Arms, munitions, and transport were the driving forces and the economy as a whole was subordinated to supplying the needs of the war-machine.

As predicted by Rathenau, the Allies implemented a blockade of Germany during the First World War. This blockade put the German government, people, and industry to their greatest

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[100]S. J. Watson, Carnot, (London: The Bodley Head, 1954), 86.

test. Although the Reich had not seriously considered the possibility of becoming an autarchy, she soon found herself cut off from free access to her sources of raw materials. Prior to the war, plans were formulated to make use of the raw materials confiscated from the countries that were conquered. When the German advance to the west was halted, relatively few significant sources of raw materials had been captured.

The Allied blockade of Germany during the first few years of the war was relatively ineffective.[101] The main reason for this failure was the misunderstanding the nations of the world had concerning the conduct of modern industrial warfare. This lack of insight was demonstrated at an international naval conference in London in 1909. The resultant Declaration of London, in attempting to protect the "legal trade" of neutral countries identified three categories of shipments bound for blockaded countries: absolute contraband (arms, ammunition, etc.); conditional contraband (fuel, foodstuffs, etc. destined for military forces); and free goods (items of no military value).[102]

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[101] Antonin Basch, "Economic Warfare," Introduction to War Economics, (Chicago: Richard D. Irwin, Inc., 1942), Brown University Economists, 199.

[102] Basch, 198-199. Also see D. T. Jack, Studies in Economic Warfare, (London: P.S. King & Son, 1940), 43-81; and Mendershausen, Economics of War, (New York: Prentice-Hall, Inc., 1940), 217-225.

The participants in the London naval conference did not realize that in modern industrial warfare, where the total resources of a nation come into play, it is extremely difficult to discriminate between contraband and free goods (military and civilian supplies). Additionally, the members of this conference did not anticipate the "pressures" that could be placed on a neighboring neutral country to act as an agent or a source of supply by the nation being blockaded.[103]

Because of these oversights, Germany could not be completely sealed off from outside sources of supply, such as Holland, Switzerland, Denmark, Roumania until 1916, Norway, and Sweden. It was through these countries that the Reich received much needed finished goods and raw materials from around the world. Ironically, much of Germany's imports during the first two years of the war came from the United States, and Germany's imports from her neutral neighbors and the United States increased as much as 400 to 500 percent.[104]

The technique used by Germany to get access to the needed raw materials was to have them purchased by agents and

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[103] Basch, 200-201.

[104] "Assets and Liabilities of the Germanic Position," Readings in the Economics of War, (Chicago: University of Chicago Press, 1918), ed. by J. Maurice Clark, et al, 129.

subsidiaries of the cartels; shipped to a "cooperating" neutral neighbor; and have the neutral transship the goods to Germany. By using this technique the Reich was able to reduce the effect of the blockade during the first years of the war.

Industrialization had had its effect on Germany. During the first decade of the twentieth century, the state was transformed from a nation that exported agricultural products to a nation that mainly exported industrial finished products. By the beginning of the war Germany relied on importing approximately one-third of her foodstuffs and a considerable quantity of raw materials.[105]

In December 1914, the economist Benjamin Baker postulated that Germany could sustain herself with foodstuffs for another year of war without tightening her belt. Also, he asserted, by instituting a rationing system, the nation could be nearly self-sufficient. Baker further stated that in the realm of natural resources no major problems should be encountered, because the Reich had the requisite ingredients to sustain a war-machine with guns, armor, and explosives. He concluded that an embargo would not seriously affect Germany's war-making potential.[106]

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[105] Benjamin Baker, "Is Germany Self-Sustaining in War," Scientific American, III (December 5, 1914), 460.

[106] Ibid., 460.

While Baker's thesis proved to be true for the first two years of the war, he ignored the psychological implications of a long term blockade. The German leaders became frustrated and made some critical decisions, both political and military, which further diminished the nation's capability to sustain herself during the war. A classic example of this was the decision to resume unrestricted submarine warfare. While this decision did boost the morale in Germany, it also doomed her to defeat. The reintroduction of unrestricted submarine warfare brought the United States and her great industrial complex into the war against Germany. Additionally, it denied Germany the raw materials and finished products she had been receiving from the United States.

Rathenau's system was designed to ameliorate the harsh effects of a blockade. In so far as strategic raw materials were concerned, the K.R.A. accomplished its intended mission. The blockade forced Germany to look inward to find the necessary materials to sustain herself. The value of the conquered territories as a source of raw materials proved to be questionable. The military advance had not taken its intended objective. While Belgium, Northern France, Poland, and Western Russia did supply vast amounts of stored materials immediately after capture, they did not prove to be as significant as anticipated. This was due mainly to Germany's lack of planning.

No administrative apparatus was set up to exploit the captured sources of supplies. Consequently, German economic operations in the conquered countries took on the characteristics of "looting." Poland and Rumania were exceptions to this. Poland provided the Reich with significant amounts of coal, timber and foodstuffs. After 1916 Rumania provided Germany with great quantities of oil, timber and foodstuffs.[107]

The industrial complexes of Belgium and Northern France were not of as much value as originally anticipated. The availability of raw materials in these areas was the major problem. If Germany was to make maximum use of the captured industries, she had to provide them with the necessary raw materials. This of course would have further diminished the limited resources available to her own industries. To try to develop and exploit the raw material potential of these countries would have been too costly at this late date; and would have required the diversion of much needed resources from the war effort.

Where Belgium and Northern France did play an important part in Germany's war effort was in assisting in the maintenance

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[107] Leo Grebler and Wilhelm Winkler, The Cost of the World War to Germany and to Austria-Hungary, (New Haven: Yale University Press, 1940), 74-75.

of the German Army of the West. This situation was described in some detail in an article by a visitor to the Western Front. Ganghofer wrote that the basic economic policy appeared to bring as few supplies as possible from Germany to satisfy the Army's needs. Those materials and supplies found in the occupied countries, and not needed by the local military forces, were shipped to the Reich. Ganghofer estimated that during the first three months of the war three-fourths of the army's needs were satisfied in this manner. He further iterated that even after the initial stocks in the conquered countries were depleted, they could still satisfy two-thirds of the army's needs. While Ganghofer's figures appear to be excessive, there can be no doubt that the contributions of Belgium and Northern France were important. The locally procured items used by the German Army in the West helped to take the pressure of agriculture and industry in the homeland.[108] This undoubtedly gave Rathenau the time he needed to convert Germany's economy to a war-time footing.

During the first phases of the blockade, the German people rallied behind the government. The survival of the "Fatherland" was at stake. They were more than willing to

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[108]"Systematic Exploitation: The Rathenau Plan," Readings in the Economics of War, (Chicago: University of Chicago Press, 1918), ed. by J. Maurice Clark, et al, 73-74.

make the sacrifices required of them. The rise of Paul von Hindenburg (1847-1934) and Erich Ludendorff(1865-1937) to the heights of the Supreme Command drove the masses to make even greater sacrifices. These two leaders were the heroes of Tannenburg and the people had a fantastic, if not childish, faith in them. Industry met the challenge of the blockade also. Most notable was the industrialist's ability to improvise.[109]

The most significant effect of the blockade against Germany was that it provided the state with one of its greatest aides in financing the war. It forced the Reich to adopt the most rigid forms of a state-controlled economy ever imposed on a nation before. Additionally, the blockade was responsible in great part for the absolute mobilization of the economy and the militarization of industry under the Hindenburg Program in late 1916.[110]

The K.R.A. had served its function well until the Battle of the Somme in 1916. At this time the military leaders

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[109]Alonzo E. Taylor, "The Results of the Blockade upon Germany," The World's Work, XXXVIII (October, 1949), 592.

[110]J. M. Clark, W. H. Hamilton, and H. G. Moulton, "Assets and Liabilities of the Germanic Position," Readings in the Economics of War, 131-132.

began to realize that they were not fighting battles in the classical sense, but rather battles of materiel. Once they understood the type "game" they were playing, they became very interested in securing the necessary wherewithall to win their battles. This situation gave rise to the emergence of the de facto Hindenburg-Ludendorff dictatorship in Germany during the First World War. The power of this dictatorship rested in the General War Office (Allgemeines Kriegsamt), under Wilhelm Groener (1867-1939). This organization, also known as the War Emergency Office, exercised almost total control over raw materials, food, labor, and munitions production.[111]

In the Fall of 1916 increasing industrial output became of prime concern to the military leaders. To accomplish this objective the Hindenburg Program was developed by General Groener and his staff. Basically, the Hindenburg Program called for the mustering of Germany's last remaining resources to provide the means to win the war. Thinking that the economy could be ordered about in a manner similar to military formations, the Hindenburg Plan ordered industry to

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[111]Goerlitz, 184.

triple armaments and double munitions production by the following Spring. Little consideration was given to the lead-time required for retooling, constructing new facilities, and securing a skilled labor force.[112]

To achieve this almost impossible goal, the German economy was militarized and placed under the control of the War Ministry. Women, children, disabled war veterans, prisoners of war, as well as voluntary and impressed foreign laborers were employed to increase production. The Patriotic Auxiliary Service Act of December 5, 1916, gave the War Ministry a legal basis for the introduction of compulsory labor service in the Reich. The key points of this law were: a) all males between the ages of 17-60 years old were bound to render some sort of service; b) the freedom to change jobs was abolished; 3) special boards were established in each district to insure critical jobs were filled and to listen to and make judgments concerning workers' complaints; and d) a system of punishments was established for violations of the Act.[113]

Blinded by ambition and zeal, Hindenburg and Ludendorff set unattainable goals under the Hindenburg Program.

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[112] Ritter, III, 346.

[113] C.E. Ayres, "The Dependence of War upon Economic Organization," Readings in the Economics of War, 99-103.

These goals were established arbitrarily without first determining the country's capability to meet them. A good example of this is that forty new steel furnaces were built to support the expansion of arms and munitions production. Unfortunately for the Reich, these furnaces could not be put into operation because of a coal and railroad transportation shortage. These industries had suffered because their skilled workers had been drafted into the army. In fact, most industrial production in Germany was hampered by the coal shortage. This problem could have been alleviated somewhat if the workers with hard skills had been identified and released from the army.[114]

Ludendorff approached the labor problem from another direction. With the power of the Patriotic Auxiliary Service Act behind him, unskilled labor and people unfit for service at the front were assigned to jobs in the skilled labor market. It is quite obvious that these replacements were not capable of the same production quotas as their skilled counterparts. The labor shortage in Germany became more critical as great numbers of new factories were built under the auspices of the Hindenburg Program.

To provide the necessary labor for her increased industrial effort, Germany established a precedent that would

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[114]Holborn, III, 463.

later be carried to extremes by Hitler. Conscripted forced laborers from conquered territories were used to fill the void in the Reich's manpower pool. Recognizing that this practice was in violation of International Law, and the possible consequences it might have on neutral neighbors, the desperate, but determined, leaders of Germany decided to go forward with this program. Forced laborers were brought from both Poland and Belgium in late 1916 and early 1917. Belgium, because of its highly industrialized nature, was tapped to provide the bulk of the Reich's skilled worker needs. There was little pretense at legality.

Groener's Kriegsamt was charged with full responsibility to provide 8,000 Belgian workers a week. By the first week of December 1916, over 40,000 Belgian forced laborers were in Germany.[115] The influx became too much for the Kriegsamt to handle. Less than one-fifth of the forced laborers were working, jobs could not be found for the remainder. Another "great" experiment failed. Because of pressures from within and without, Germany halted the importation of forced laborers on February 10, 1917. Over the next few months the forced laborers were permitted to return to Belgium. Always one to disassociate himself from failure, Ludendorff stated that the

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[115]Ritter, III, 369-370.

the war industries and the War Ministry had promoted the idea of forced labor, not the Army.[116] Ludendorff made no mention of the more than 60,000 Belgian forced laborers who continued to work for the Army in its rear echelon areas.[117]

The expansion of existing and the construction of additional industrial facilities under the Hindenburg Program required tremendous amounts of new machinery and equipment. Germany could ill-afford the luxury of devoting the necessary resources to this project. It would mean a reduction of war supplies, if only temporarily, until the new facilities were operational. The German government, more specifically the Kriegsamt, solved this problem and at the same time established another precedent in economic warfare. The Kriegsamt looked to the occupied territories again. The necessary machinery and equipment were confiscated on a large scale and sent back to Germany. Whole industrial complexes in Belgium and Poland were crippled or destroyed by this procedure. Using Belgium as an example, in the last half of 1917 over 106 industrial plants were transferred to Germany. This number increased drastically

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[116] Ritter, III, 372.

[117] Ibid., 372.

during 1918.[118] It was with this program that the Reich realized the true value of the occupied territories to her, and she exploited them to the fullest.

The military leadership kept stiring the masses up with promises of possible victory. To achieve this victory all that was needed was a little more effort on the farm and in the factory. A little sacrifice was not too much to ask for the survival of the "Fatherland." The average German responded admirably to the task at hand. The people had come to believe in Ludendorff's "total victory or total annihilation" theory concerning the war. The continued good news of "victories" at the front spurred them on. The legislators and the people supported Ludendorff's demand for the reintroduction of unrestricted submarine warfare, even though they knew that this action would probably bring the United States into the war. To a great extent this support was based on the Supreme Command's promise that the resumption of unrestricted submarine warfare would be decisive in ending the war in 1917 (supposedly before the United States could influence the outcome).[119]

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[118]Grebler and Winkler, 75-76.

[119]Mann, 318-319.

Unfortunately for the German people, this was not the case.

With Russia out of the war in late 1917, Ludendorff hoped to achieve victory by mounting one last great offensive in the West. With the troops freed from the Eastern Front, he had 192 divisions for the attack. The Allies faced him with 170 divisions. Ludendorff hoped to negate this relatively equal combat ratio by massing his forces at the perceived point of decision at a time of his selection.[120] The General Staff did not believe that the Americans could raise, equip, train, and deploy a force in sufficient numbers to interfere with German plans prior to the summer of 1918. Consequently, the date for the Ludendorff Offensive was set for March 21, 1918.[121]

This proved to be a miscalculation on the part of the General Staff. By the end of March 1918 the Americans had placed 329,005 soldiers in France with no interruption of supplies to the Allies. This miscalculation became very costly to the Germans in terms of success.

By July 1918 it became apparent to the General Staff that the Great Offensive had stalled. They had lost the initiative and there was little hope of achieving victory on the

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[120]Holborn, III, 495-496.

[121]Ralph Haswell Lutz, ed., The Causes of the German Collapse in 1918. (Stanford: Hoover War Library Publications--No. 4, 1934), tr. by W. L. Campbell, 61-66.

battlefield. To their credit it must be noted that Ludendorff and the General Staff had enjoyed notable tactical successes during the first few months of the campaign; however, the strategic decision that they had hoped for had eluded them. It is also worthy of mention that the German industries had met the challenge placed upon them. The German Army did not suffer from a lack of war materials during the campaign. Its greatest shortage was in manpower; however, it is doubtful that industry could have provided the supplies that would have been necessary to insure success, if the army had had an unrestricted manpower pool to draw upon.

The realization by the population that the last Great Offensive had failed to achieve its objective marked the beginning of the collapse of the German homefront. Until this time the population as a whole had the utmost confidence in the Supreme Command's ability to win the war. They had readily accepted Walther Rathenau's statement at the beginning of the war that, "The economic task is no longer a private one, it is the task of the community."[122] The people had endured the effects of the blockade and in fact the blockade had brought them closer together in their will to resist.

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[122]"Wirtschaft ist nicht mehr Sache des einzelnen, sondern Sache der Gesamtheit." Bruck, 141.

The will of the German people to make sacrifices, unprecedented in modern times, did not appear to wane. They supported the Hindenburg Program in the Fall of 1916, which meant that they were ready to assume a greater part of the war burden. The Hindenburg Program marked the beginning of "total" war in Germany. Not a man, woman, or child was spared from the effects of the war. Despite these personal privations, the population continued to support the war; and even became more aggressive in their demands as far as Germany's war aims were concerned. Annexation of vast amounts of foreign territories would make what they had suffered worthwhile.[123]

The Germans knew that no early peace was in sight as early as December 14, 1916. On that date General Groener stated in an interview with a New York Times correspondent that Germany was preparing and mobilizing her economy and resources to continue the war indefinitely, or until she wins.[124] While some minor discontent did emerge among small elements of the

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[123]Fritz Fischer, World Power or Decline, (New York: W. W. Norton & Co. Inc., 1974), tr. by L. Farrar, R. Kimber, and R. Kimber, 78-79.

[124]General Wilhelm Groener, "Germany's 'Organization for Victory' 1916," Readings in the Economics of War, 199-201.

population, che German people were ready to give their support to thei leaders. This support continued until the summer of 1918.

The national will of the Germans, while giving broad base support to the government prior to the summer of 1918, did have the seeds of decay present. Some of these seeds were: war profiteering on the part of various industries; the rapid rise in society of the industrial worker; the housing shortage, caused by the expansion of industry in 1917-18; the food shortage which was aggravated by the migration of farmers to industrial centers; inflation, which affected the small businessman, farmer, and salaried employee the worst; jealousy between the various sectors of the labor force; discrimination which allocated more food to certain workers; and the presence of communist and socialist agitators (especially after the collapse of Russia in 1917).

Fritz Fischer has stated that the German people's support of the war was maintained by the propagation of the Middle Europe (Mitteleuropa) concept. The Mitteleuropa concept envisioned an economic union of Central European nations. It was originally proposed by Rathenau in 1914 and included France, Belgium, Germany and Austria-Hungary. The idea was dropped at the outbreak of the war, but was revived in late 1915. The revision included German economic domination ` oland, Rumania,

as well as the countries previously mentioned. The purpose of the concept was to create an economic bloc of strength unequaled in the world. This concept played an important role in German thinking until the summer of 1918.[125]

Another contributing factor to the German people's support of the war was the general feeling that any organized, or unorganized, opposition to the war was tantamount to treason. The survival of the German "nation" was at stake and very few people were willing to be responsible for crippling the war effort.[126]

After the failure of Ludendorff's Offensive, the attitude of the German in the street began to change dramatically. The staggering losses at the front, coupled with the cumulative sacrifices of four years of war and blockade came to a head. The German people were tired, practically starving, and desperate. They had lost faith in the military and wanted to put an end to the war. Strikes and civil strife became rampant. Communist and socialist agitators became very active, sowing the

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[125]Fischer, 46-49.

[126]Ibid., 80-81.

seeds of discontent among soldiers and civilians alike. Now, Germans were listening to what these agitators had to say.

The effect of the agitators on the soldiers and workers was devastating. Soldiers who went home on leave either stayed at home or they returned to the front, but not to their units. The number of men falling into the latter category has been estimated at hundreds of thousands.[127] Many of those who did return to their units became revolutionary agitators at the front. Needless to say, this had a telling effect on the fighting spirit of the frontline soldier. The same type situation existed in the factories.

The German withdrawals on the Western Front in September 1918, and the collapse of Bulgaria and Austria-Hungary, signaled the end for Germany. Her military forces were in an untenable position and faced with imminent destruction. To prevent this the Supreme Command advised the government on September 29, 1918, to arrange an armistice as soon as possible. This was quite a shock for the government because a few weeks earlier von Hindenburg had informed them that, "...he hoped that we would after all succeed in remaining on French soil and

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[127]Report by General von Kuhl, The Causes of the German Collapse in 1918, 133.

thereby in finally enforcing our will upon the enemy."[128] After verifying the situation, the Kaiser agreed to seek an armistice. In an attempt to gain President Wilson's backing for the proposed armistice, Welhelm II sent State Secretaries von Hintze and Count Roedern to Berlin to establish a parliamentary form of government for Germany.

The Emperor's attempt to change the Reich's form of government did not have the desired effect. The sinking of the British passenger ship Leinster by a U-boat (submarine), on October 12, 1918, revived the Allies' ire over "barbaric German militarism."[129]

To save Germany from suffering the horrors of Northern France, besides preventing destruction of the Army, Ludendorff was dismissed and the Kaiser was forced to abdicate in favor of a Republic. This was the price Germany paid to conclude the armistice which went into effect on November 11,1918. Germany was a defeated nation at the mercy of her enemies. The population and civil government were to stand accused by the Army of "stabbing the country in the back" by their eagerness to meet Allied demands.

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[128]"Resolutions of the Fourth Subcommittee and Record of Proceedings," Constituent National Assembly,1919-20, The Causes of the German Collapse in 1918, 7-8.

[129]Ritter, IV, 339-350.

Much literature has been devoted to the "stab in the back" question in Germany since the First World War. The question itself is open to interpretation as no conclusive evidence has been found, either pro or con. The collapse of the German home front did not occur behind a victorious army. All concerned did their duty under extreme conditions. The soldiers fought well until they realized the end was near. The civil government supported the military Supreme Command. The population endured unspeakable hardships, yet supported their leaders until hardships and unfulfilled promises became too much to bear.

What all failed to recognize has turned out to be one of the most important lessons of World War I, the nature of warfare had changed. No longer could a nation depend on conducting a "short" war with readily available resources and materials. Industrialization, mechanization,and evolving technology had provided the armies of the world with more efficient and lethal means of destroying each other. Because of this the conduct of warfare in the twentieth century between industrial nations has become a battle of technology and production. That is to say, that industrial capability, as opposed to military forces, has become increasingly a decisive factor in twentieth century warfare.

Since wars between industrial nations are characteristically wars between rival industrial complexes, the civil

populations of the combatant nations will bear an increasingly heavier burden in support of the war effort. If the war evolves beyond its "limited" objective, all of the economic, industrial, human, and natural resources of the nation will be involved and dedicated to the war-effort. To control these assets and make the best use of them, adequate planning and preparation must be undertaken during times of peace. These preparations must also be under constant review to insure their adequacy.

As a result of their experience during the First World War, the German Army recognized the need for economic planning and preparation for the possibility of future war. To satisfy this need an Economic General Staff was reorganized during the inter-war years. This staff played an important role in the rebuilding of the German Army and nation; and it proved to be vitally important in providing Hitler with the means to pursue his goal of European domination.

CHAPTER III

GERMANY DURING THE INTER-WAR PERIOD 1919-1939

At 11:00 a.m. on November 11, 1918, an armistice between Germany and the Allied and Associated Powers ended the fighting in Europe. While not formally a capitulation on the Reich's part, the armistice was the precursor of Germany's unconditional surrender. The German Army had been unable to stem the onslaught of the Allied forces, and wanted the armistice to provide a respite for reorganizing and requippping prior to the resumption of hostilities. The Supreme Command's plans, however, never were achieved.[130]

While the armistice negotiations were conducted in the forest of Compiegne, a bloodless revolution spread over Germany. Soldiers' and workers' councils sprang up everywhere to challenge the Imperial state governments.[131] On November 9, after the Kaiser's abdication, the Social Democrats moved quickly to seize the reins of government, while Philipp Scheidemann, their leader, proclaimed from the steps of the Reichstag the establishment of the republic. The German people yearned for peace

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[130] Ritter, IV, 340-341.

[131] Holborn, III, 517-518.

and if that meant the overthrow of the monarchy, then they were willing to accept this.[132]

The conditions of the Armistice were largely dictated by the French and English in order to make it impossible for Germany to resume hostilities. These demands required, among other things, the retiring of German forces to positions behind the Rhine; the placing of Allied armies on the Left Bank in order to secure important bridgeheads over the Rhine; the delivery of great quantities of airplanes, guns, mine-throwers, and trucks to the Allies; and the unconditional return of Allied prisoners of war. Additionally, the invalidation of the Treaties of Brest-Litovsk and Bucarest; and the withdrawal of all German troops from Eastern Europe, Austria-Hungary, and Turkey were conditions of the Armistice. From the naval aspect, Germany was required to surrender all submarines; a substantial portion of her battle fleet; and to demilitarize the remainder of her fleet.[133] By complying with these terms the German nation was completely at the mercy of the Allied powers. Now with unrestricted access to the Baltic, the Allies could tighten the economic blockade of Germany.

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[132] Mann, 331.

[133] Holborn, III, 518.

During the preliminary and subsequent negotiations, only the Allied and Associated powers, along with those nationalities that had claims against the former Central Powers, enjoyed the fruits of Versailles. The Germans were not permitted to negotiate with their conquerors. The final settlement was dictated and imposed upon the vanquished. Without the power to resist openly, the new German Government had to alternative but to accept.

In German eyes the Treaty of Paris was not a covenent of peace, but rather an instrument for revenge. The bitterest pill Germany had to swallow was Article 231 of the treaty in which she was required to accept complete responsibility for starting the war. The so-called "war guilt" clause became an open sore which was very slow in healing.

Other Articles of the Versailles Treaty which were designed to destroy Germany as a military power were Articles 42, 160, 180, and 181. In substance these clauses restricted Germany from maintaining, or constructing, any fortifications within fifty kilometers of the Right Bank of the Rhine. The German Army was restricted to seven divisions (100,000 officers and men). The General Staff was to be disbanded and not reconstituted in any form. All fortifications within an area fifty kilometers east of the Rhine were to be disarmed and dismantled. The German Navy was limited to six battleships (Deutschland or Lothringen class); six light cruisers; twelve

destroyers; and twelve torpedo boats. No submarines were permitted.[134]

From the economic standpoint Articles 45, 51, 87,119, and 231 were designed to significantly reduce Germany's industrial strength and thereby reduce her stature as a world power. Under the provisions of these Articles Germany was required to cede the coal mines of the Saar Basin to France. Additionally, France received the territories of Alsace and Lorraine. Germany was required to recognize the independence of Poland. All overseas possessions were stripped from the Reich. In addition to being held responsible for starting the war, Germany was required to agree to pay reparations (amount to be determined later by the Allies).[135]

As a guarantee to her compliance to the provisions of the treaty, Germany had to agree to Articles 428 and 431. The former provided for the Allied occupation of the West Bank of the Rhine for a period of fifteen years. The latter stated that, "if before the expiration of the period of fifteen years

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[134] Historic Documents of World War I, (Princeton: D. Van Norstrand Co., 1958), ed. by Louis L. Snyder, 187-188.

[135] Ibid., 186-188.

Germany complies with all the undertakings resulting from the present Treaty, the occupying forces will be withdrawn immediately."[136]

From an economic standpoint the provisions of the Treaty were disasterous to Germany. Prior to the war the German economic system was dependent on three main factors:

> 1. Overseas commerce, as represented by her mercantile marine, her colonies, her foreign investments, her exports, and the overseas connections of her merchants;
> 2. The exploitation of her coal and iron and the industries built upon them; and
> 3. Her transport and tariff system.[137]

The economic terms of the treaty were so severe and unrealistic that John Maynard Keynes (1883-1946), the principal representative of the British Treasury, and a renowned economist, walked out of the conference and became the leading critic of Versailles. Keynes believed that the Allied powers grossly overestimated Germany's capacity to pay reparations and many items were unjustly included under the title "reparations," (e.g., old-age pensions and separation pay for French soldiers). Additionally, he believed that by stripping Germany of ten percent of her continental territory and population; one-third

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[136] Historic Documents, 189.

[137] John Maynard Keynes, "The Economic Consequences of the Peace--A British View," The Versailles Settlement, (Lexington, Mass.: D.C. Heath & Co., 1960), ed. by Ivo J. Lederer, 43.

of her coal; three-quarters of her iron ore; all of her overseas colonies; and almost all of her mercantile marine, that the Allies robbed the nation of her capacity to pay the huge reparations being demanded. Furthermore, Keynes believed that the Treaty would upset the economic equilibrium of Europe and lead to economic and political turmoil until it was abrogated.[138]

It is noteworthy to mention that the American delegation to the Peace Conference agreed with Keynes, especially insofar as fixing a realistic "total amount" of reparations was concerned. John Foster Dulles (1888-1959), an American representative to the Reparations' Commission and the Supreme Economic Council, stated that the question of reparations was certainly political in nature for France and England. The public opinion of these two countries prevented their representatives from acting with independence and wisdom during the conference.[139] According to Dulles, emotion rather than intelligence, ruled during the conduct of the conference of reparations.[140]

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[138] Keynes, 46-49.

[139] John Foster Dulles, "The Dilemma of Reparations--An American View," The Versailles Settlement, (Lexington, Mass.: D. C. Heath & Co., 1960), ed. by Ivo J. Lederer, 67-69.

[140] Ibid., 72.

The total amount of reparations was to be determined by the Reparations Commission on or before May 1, 1921. It was decided that the amount was to be determined on the basis of claims submitted, rather than German ability to pay. General Smuts, representing the British Dominions, stated that "the financial demands were kept at a sufficiently exorbitant total to serve the original object of crippling Germany's economic recovery."[141] The United States dropped from participation in the Reparations' Commission when the U.S. Senate refused to ratify the treaty.

In 1921 the remaining members of the Reparations' Commission fixed Germany's indebtedness at 132 billion gold marks (80 billion for military pensions and 52 billion for damages).[142] In 1913 the Reich's total income was estimated to be 40 billion marks.[143] This figure included the income from Alsace, Lorraine, Upper Silesia, the Polish territories, the Saar Basin, and her overseas colonies. The loss of these territories and their resources greatly diminished Germany's capability to pay the ridiculous reparations placed upon her.

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[141] Max Sering, Germany Under the Dawes Plan, (London: P.S. King & Son, Ltd., 1929), tr. by S. Milton Hart, 11.

[142] Ibid., 12.

[143] Ibid., 13.

The German political economist, Dr. Sering, suggested that the French knew Germany would be unable to make the reparations' payments. Germany's default would then be used by the French to invade prostrate Germany to establish the Rhenish buffer-state that France was denied at the Peace Conference. The French occupation of the Ruhr in 1923 seems to give credence to Dr. Sering's thesis.

Allied attempts to collect payments on the 132 billion gold marks failed miserably. The wanton destruction of German heavy industry under the supervision of the Inter-Allied Commission of Control contributed significantly to the Republic's inability to make the reparations payments. In the Krupp industries alone 9,300 machines, 801,420 gauges, jigs, moulds, and tools in addition to 379 installations were destroyed.[144] The same situation was imposed upon other firms. In their haste to disarm Germany and destroy her war potential, the Allies further reduced Weimar's capability to pay her debts.

The seizure of railways, mines, and capital, coupled with the loss of 43 percent of her pig-iron production; 35 percent of her steel-ingot production; 37 percent of her steel

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[144] Wheeler-Bennett, 144.

works capacity; and 31 percent of her rolling-mill production, further diminished Germany's capability to pay her creditors.[145] Weimar's tardiness in making a reparations payment was used by the French as a pretext to occupy and exploit the Ruhr. The new German government found itself powerless to resist the combined French-Belgian invasion on January 11, 1923. Instead of encouraging overt military action against the invaders, the Weimar leaders called for passive resistance on the part of the workers. To make this passive resistance work, the government was required to subsidize the workers.

The Germans passive resistance policy frustrated French and Belgian attempts to extract large amounts of coal from the Ruhr. The government support of the Ruhr workers by printing more money, however, led to an inflation in Germany unprecedented in history. Using 1913 wholesale prices as an index of 100, the index was 147,500 in December 1922. One year later the index rose to 126,000,000,000,000.[146]

Fritz Sternberg suggests that the period of inflation was significant for three reasons. First, it made Germany almost entirely free of internal debt. This made it possible

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[145] Sternberg, 131.

[146] W. Arthur Lewis, Economic Survey: 1919-1939, (New York: Harper and Row Publishers, 1969), 24.

for the National Socialists to finance their rearmament program. Second, inflation had a decisive effect on the class structure in Germany. The middle-class as a whole lost everything they had and were forced to enter the production field to survive. Last, German capital was able to exploit the working class during the period of inflation. This permitted industry to rebuild their facilities along modern lines taking maximum advantage of technological advancements.[147]

As a result of the German inflation and their inability to extract reparations payments from the Weimar government, the Allies convened a Conference of Experts in Paris in 1924. Under the leadership of General Dawes, the committee was to determine Germany's capability to pay her debts. The findings of this committee's deliberations became known as the Dawes Plan.

The Dawes Plan recognized the need of reestablishing Germany's internal and external credit through the restoration of fiscal and economic unity in Germany. Confidence, both at home and abroad, was determined to be the key element in accomplishing the above objectives. The Dawes Plan also recognized that to make reparations payments, Germany's economy must show an economic surplus. To assist German industry in reestablishing itself, countries with economic surpluses were encouraged to

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[147]Sternberg, 133-134.

lend Germany money. While the Dawes Plan did stimulate reconstruction in Germany, it did not set a total amount on her indebtedness.[148]

Although the Weimar Government accepted the Dawes Plan, they found it to be insufferable in some respects. The Dawes Plan called for foreign economic and financial controls over the German economy. Foreigners sat on the Board of Directors of the Reichsbahn and the Reichsbank. Foreigners were able to interfere with policy matters in the Ministry of Finance. These outside "controls," administered by the Allied Agent General of Reperations in Berlin contributed significantly to the German dissatisfaction with the Treaty of Versailles. All semblance of sovereignty was lost to the Germans. While the Dawes Plan assisted in the liberation of the Ruhr, the Rhineland was still occupied by foreign troops in violation of Article 431 of the Treaty.[149]

By not setting a definite, attainable reparations figure, the Dawes Plan contributed to fiscal uncertainty in Germany. Accordingly, in September 1928, the Agent General of

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[148] Hjalmar Schacht, The End of Reparations, (New York: Jonathan Cape & Harrison Smith, 1931), tr. by Lewis Gannett, 3-4.

[149] Ibid., 41.

Reparations suggested that another conference of experts be assembled to resolve the problem of reparations. The Allied governments agreed to hold such a meeting; and the Second Experts Conference, chaired by Owen D. Young, opened in Paris on February 11, 1929. This time the German government was permitted to participate actively in the negotiations.[150]

On May 3, 1929, when it appeared that the conference was about to break up without resolving anything, the German government instructed its delegation to accept the proposals of Mr. Young. While Germany's "experts" at the conference disagreed with the Young Plan, they accepted it as directed by their cabinet.[151]

The Young Plan went into effect after it was signed on January 30, 1930. The chief benefits of this plan, as far as the Germans were concerned, were as follows: a) the total debt was fixed at 37 billion marks, payable at a fixed schedule through 1988; b) the Agent General was removed from Berlin, as were the foreigners from the boards of the Reichsbank and Reichsbahn; c) controlling agencies of the Dawes Plan were replaced by the Bank for International Settlements founded in Basil,

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[150] Schacht, 54-55.

[151] Ibid., 77-78.

Switzerland; and d) a two-year respite in reparations payments was granted.[152] Under the Young Plan the Germans regained sovereignty over their economy, but were still burdened with paying for the First World War.

From its dismemberment immediately after the war German heavy industry began a gradual rebuilding process. The reconstruction was stimulated by the inflation of 1923 and the provisions of the Dawes and Young Plans. By having to rebuild from scratch, the German industrial facilities became the most modern in Europe. New technologies, machinery, and production methods were used to the maximum. By 1935, German heavy industry regained its position of preeminence in Europe, but the struggle back was not easy.

The reduction in war production in late 1918, created a critical unemployment problem in the Weimar Republic. The payment of reparations, unstable currency, and the loss of raw materials severely crippled the nation's industry. Since Germany was the focal point for the settlement of European war debts, the Allies needed to get German industry back on its feet. The Dawes Plan was instituted for the purpose of stabilizing German currency and enabling the Republic to show a

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[152] Stolper, 95-97.

surplus in her foreign exchange, thereby being able to meet reparations payments. France, for example, tied the repayment of her debts to the United States, to the receipt of reparations from Germany.[153]

To alleviate the problem caused by huge industrial facilities converting to small peace-time markets, controlling organizations such as the Rohstahlgemeinschaft were established in 1924. The purpose of this organization was to establish production quotas for the production of iron and steel in Germany. In 1926, international agreement between Germany, France, Belgium, Luxemburg, and the Saar did the same thing on an international basis. These controlling organizations were initiated in other industries as well and they were contributing factors to the recovery of German industry in the 1926-28 time frame.[154]

By 1931, Germany had succeeded in achieving a favorable balance of trade; however, the international monetary crisis of that year dragged the Weimar economy down. By 1934, exports were only half of their 1929 volume. In June 1934, Hitler ordered a moratorium on all payments in foreign exchange.[155]

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[153] Issac Lippincott, Economic Resources and Industries of the World, (New York: D. Appleton & Co., 1929), 566-567.

[154] Ibid., 563.

[155] Lewis, 91-93.

The payment of reparations, the dismemberment of the Reich, the occupation of the Rhineland, and the foreign controls over the economy imposed by the Treaty of Versailles contributed significantly to the dissatisfaction of the German people with the Weimar government. These conditions provided fertile ground for revolutionary and radical political movements within the nation. The Allies and the Treaty were blamed for the inflation which wiped out the savings and holdings of the middle-class. This, in turn, resulted in the proletarization of the middle-class.[156]

One of the most radical of the political movements in the Republic was founded on January 5, 1919, the German Workers' Party. On September 16, of that year, Adolf Hitler (1889-1945), joined the party, and within a month was placed in charge of propaganda. At a meeting in Salzburg on August 7-8, 1920, the party changed its name to the National Socialist German Workers' Party (Nationalsozialistische Deutsche Arbeiterpartei, or NSDAP). On July 29, 1921, Hitler became President of the NSDAP with full powers and instituted his "Leader Principle" (Fuehrerprinzip) of personal authority.[157]

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[156]Sternberg, 133.

[157]Adolf Hitler, The Speeches of Adolf Hitler, (2 vols.: London: Oxford University Press, 1942), tr. and ed. by Norman H. Baynes, I, 2.

While attempts to seize power during the 1920's failed, under Hitler's guidance the NSDAP continued to grow and receive sympathetic support from the various elements of German society. The key point that permeated most of Hitler's speeches and his written propaganda was the injustice of the Diktat of Versailles.[158] Almost every German could relate to this theme; and nearly everyone harbored a deep resentment against the Allied nations for imposing such a humiliation on the Reich.

Hitler's arguments initially frightened many would-be supporters of his movement. While not giving active support to the Nazis, some people extended moral support. As Hitler's strength grew during the late 1920's and early 1930's, the number of active supporters of the Nazi movement increased. Of singular importance to the NSDAP's public support was the 25 point program which was enumerated at the Hofbrauhaus in Munich on February 24, 1920. The program was broad based and called for the abrogation of the Versailles Treaty. Additionally, the 25 points listed the requirements for German citizenship (German blood only); voting requirements; a halt to non-German immigration; the duty of citizens to perform labor for the

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[158] Hitler, I & II; also see Adolf Hitler, Mein Kampf, (New York: Stackpole Sons, 1939); Hitler's Secret Book, (New York: Grove Press, 1961), tr by Salvator Attanasio; and My New Order, (New York: Reynal & Hitchcock, 1941), ed. by Raoul de Roussy de Sales.

state; an attack against capitalist and war profiteers (this was later clarified by Hitler on April 13, 1928 to mean confiscation of Jewish companies); and right to an education among other proposals. In other words, the Party stood for everything good and it was determined to combat the evil influences that had crept into the German nation.[159] The Nazi program did not appear radical and it offered much to people who had nothing.

Hitler was obsessed with the potential conspiratorial threat that "non-German" Jews, Masons, and Marxist were capable

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[159]Hitler, I, 102-107. The points from this program that had broad base appeal were: "Point 1. We demand the union of all Germans, on the basis of the right of the self-determination of peoples, for a great Germany. Point 2. We demand equality of rights for the German People in its dealings with other nations, and abolition of the Peace Treaties of Versailles and St. Germain. Point 3. We demand land and territory (colonies) for the nourishment of our people and for settling our surplus population. Point 7. We demand that the State shall make it its first duty to promote the industry and livelihood of the citizens of the State. If it is not possible to nourish the entire population of the State, foreign nationals (noncitizens of the State) must be excluded from the Reich. Point 14. We demand that there shall be profit-sharing in the great industries. Point 15. We demand a generous development of provision for old age. Point 17. We demand a land-reform suitable to our nation requirements, the passing of a law for the confiscation without compensation of land for communal purposes, the abolition of interest on mortgages, and the prohibition of all speculation in land. Point 18. We demand ruthless war upon all those whose activities are injurious to the common interest. Common criminals against the nation, usurers, profiteers, etc., must be punished with death, whatever their creed or race. Point 22. We demand the abolition of mercenary troops and the formation of a national army. Point 25. That all the foregoing requirements may be realized we demand the creation of a strong central power of the Reich. Unconditional authority of the politically central Parliament over the entire Reich and its organization in general."

of under the aegis of Versailles; so, naturally, they became key targets for Nazi propaganda during the 1920's and 1930's. By focusing the attention of the German people on these "inter--nationalist" foes of the Reich as the cause of their current problems, Hitler, with his able propagandist Joseph Goebbels (1897-1945), was able to provide the masses with a common enemy to hate. Coupled with this message, the Nazi theory of the superiority of the German race, along with the twin beliefs of Nordic domination and Lebensraum, encouraged the nation to make sacrifices for the future--even if this meant war.

Long recognizing the value of propaganda as a crucial element of persuasion, Hitler harangued his way to power in January 1933. In March of that year, the new Chancellor rewarded Dr. Goebbels for his stupendous efforts and contributions to the Party, by appointing him to the newly-created office of Minister for National Enlightenment and Propaganda.[160] Goebbels' Ministry played a leading role in the Third Reich until the latter's collapse in May 1945.

The German economic recovery under the Nazi leadership was phenomenal. Basically, the NSDAP policy of 1933 emphasized

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[160]Joachim C. Fest, The Face of the Third Reich, (London: Weidenfeld & Nicolson, 1970), tr. by Michael Bullock, 92.

a massive public works program designed to end unemployment. The public spending programs were directed at improving natural resources (such as the forests); improving public services (e.g., roads and railways); and subsidies to heavy industry to stimulate private investment. Government investments in heavy industry from January 1933 to January 1934 totaled approximately four billion marks.[161] These investments were financed through state loans which the capitalists were compelled to subscribe to and by increasing taxation. To insure that only the "selected" heavy industries received capital for expansion, the Nazis limited investment opportunities in Germany to investment in state loans and state approved projects.[162] The NSDAP economic recovery program proved to be very successful. Unemployment fell from six million in 1933 to 2.6 million by January 1934. Integral to the success of the Nazi program was the abolition of all trade unions in 1933.[163] This had the effect of providing industry with "cheap" labor under Hitler's reign.

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[161] Lewis, 95.

[162] Sternberg, 227-228.

[163] Lewis, 94-95.

As private capital was reinvested in industry, the subsidies by the state were not reduced. Instead, after 1935, with the official policy of rearmament, government contributions to industry, especially heavy industry, were greatly multiplied. By fixing wages early, besides abolishing the unions, the Nazis were able to put more people into the factories. The increased revenues from taxation, coupled with the diminishing outlay for unemployment benefits, provided larger portions of the national resources to the Nazis for their own purposes. To reduce the threat of inflation prices were controlled vigorously in 1936; and by 1938, unemployment all but disappeared in the Third Reich.[164]

In the military sphere several important changes took place in Germany after the First World War. The German Army was deprived of its influence in the arena of politics. Except for a limited comeback early in Hitler's reign, this lack of influence existed through the end of the Second World War. This is best demonstrated by the following example. At the beginning of the First World War the military assumed many civilian functions under the Law of Seige; however, the opposite was true during the period 1939-45.[165] Under Hitler, the

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[164] Lewis, 96.

[165] Gordon A. Craig, War, Politics and Diplomacy, (New York: Frederick A. Praeger, 1966), 132-133.

military districts and their economic functions remained in the hands of the local party officials (Gauleiters). Hitler probably chose to do this because he had absolute control over the party officials.

Perhaps the most devastating changes for the Army took place under the provisions of Articles 42, 160, 180, and 181 of the Versailles Treaty. Limited to a total of 100,000 officers and men, restricted in weaponery (no tanks, airplanes, heavy artillery, etc.), required to dissolve the General Staff, and having minimum periods of service set at twelve years for enlisted men and twenty-five years for officers, the German Nation found itself almost complete disarmed.[166] The missions of the 100,000-man force were reduced to police internal order and maintain border protection. With the nations around Germany still heavily armed, the mission to provide border protection was tantamount to nothing less than a military absurdity.

Immediately after the November Revolution of 1918, the Army found itself in the strange position of determining who to support politically. The Kaiser had fled to Holland and the officers and men did not feel any loyalty to the new Republic. With the demobilization of the Regular Army, para-military

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[166]Goerlitz, 215.

organizations, the so-called Free Corps (Freikorps), sprang up throughout Germany. Under the leadership of experienced combat officers, the Freikorps became either instruments to restore law and order or implements of self-aggrandizement. Under these conditions the years 1919-1920 were ones in which the decision had to be made to organize the new German Army, either after the Freikorps or under the old General Staff concept.[167]

The man who was responsible for the selection of the traditional approach was General Hans von Seeckt (1866-1936). Seeckt believed that the loyalty of the armed forces was to the state, not to a particular form of government. The General adopted this view because he realized that the monarchy would not be reestablished in Germany. His objective was the preservation to the Army. To insure accomplishment of his objective and lay the groundwork for Germany's revival as a great power, von Seeckt knew the army must act as the organ on which a stable government could be built.[168] With this in mind von Seeckt set himself to depoliticizing and rebuilding Germany's Army. By divorcing the Army from internal political struggles,

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[167]Goerlitz, 211.

[168]Holborn, III, 584-585.

he succeeded in maintaining the respect of the population in general. This was especially important since most of the people still had the bad taste in their mouths of the Hindenburg-Ludendorff dictatorship. "All forms of political activity, participation in any political organization or in any political gathering, were strictly forbidden to both officers and men."[169] Soldiers even lost their right to vote while in military service.

The method Seeckt used to circumvent the restrictions of Versailles on any German General Staff was the introduction of a horizontal organization of Reichswehr departments under the War Minister. The two major departments under this system were the Army Office (Heeresamt), and the Troop Office (Truppenamt). The Heeresamt was organized to carry on all of the functions of the old War Ministry. The Truppenamt was charged with all the responsibilities that had previously belonged to the General Staff. This organization had one serious flaw, it permitted direct access by department heads to the War Minister.[170]

To overcome this problem the horizontal arrangement of departments was replaced by a vertical organization on October 1, 1920. With this reorganization the post of Chief of Army

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[169] Wheeler-Bennett, 95-96.

[170] Goerlitz, 217-218.

Command (Chef der Heeresleitung) was created subordinate to the War Minister. This new office was for all practical purposes the old Chief of the General Staff position. Like the Truppenamt, Chef der Heeresleitung was forbidden by the Versailles Treaty; however, Seeckt sought to overcome this by an exercise in Semantics. One critical difference in the pre-1919 and current systems is that the Chief of Army Command performed two functions: he was the Supreme Commander; and the Chief of the General Staff. By being subordinate to the Chef der Heeresleitung, the Truppenamt lost the old General Staff's right to approach the head of state directly (Immediatstellung). This had the effect of further diminishing their political influence.[171] On March 17, 1921, Seeckt was appointed Chief of Army Command.

Using this appointment as a carte blanche, Seeckt began rebuilding the Army in earnest. The Reichswehr was staffed by many competent General Staff officers of his choosing. The term "General Staff" was replaced by Leader Staff (Fuehrerstab). New departments were added to the headquarters structure. These included the General Army Office (Allgemeines Heeresamt), the Army Personnel Office (Heerespersonalamt), the Army Administration Office (Heeresverwaltungsamt), and the Army

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[171]Goerlitz, 218-219, and 222.

Armaments Office (Heeres-Waffenamt). The Truppenamt was organized into four elements: T.1-Operations and deployment; T.2-Organisation; T.3-Foreign Armies; and T.4-Training.[172]

Limited to 4,000 officers with tours of duty set at twenty-five years, Seeckt was faced with the immense problem of educating his General Staff officers for future expansion of the army. Denied the use of the War Academy (Kriegsakademie) by Versailles, Seeckt had to rely on on-the-job training for his staff officers. While many of Germany's renowned World War II leaders (von Braushitsch, Kesselring, Guderian, Beck, von Fritsch, Halder, and others) were trained in this manner, the system did not permit enough professional training for the officer corps as a whole. This deficiency became evident during the rapid expansion of the army under Hitler. There were not enough well-trained General Staff officers to go around.[173]

To overcome the restrictions on armaments and to train his soldiers on modern weapons (tanks, airplanes, heavy artillery, etc.), von Seeckt clandestinely entered into a rapprochement with the Red Army. The movement towards Russo-German rapprochement was accelerated by the Russian Army's poor showing during

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[172] Goerlitz, 226.

[173] Ibid., 225-227.

the Russo-Polish War of 1920-21. After the signing of the Treaty of Riga (March 18, 1921), Lenin formally requested German assistance in reorganizing the Red Army.[174]

Von Seeckt had anticipated this and had set up a secret unit (Sondergruppe R) within the Army Command to supervise and administer military agreements with the Soviet Union. The first agreement was the German-Russian Commercial Agreement of May 6, 1921. In September of that year secret plans were negotiated for German assistance in the expansion of the Russian armaments industry.[175] In addition to providing German technology to the Russians, the secret agreements permitted the Germans to train their personnel on tanks, airplanes and other forbidden weapons in Russia. Also, operating under various cover organizations, such as the Society for the Furthering of Industrial Enterprises (Gesellschaft fur Forderung gewerblicher Unternehmungen, or GEFU), German industry operated branch factories in Russia. These factories produced military aircraft, tanks, poison gas, and heavy artillery, all of which were expressly forbidden by the Versailles Treaty.[176]

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[174] Wheeler-Bennett, 127.

[175] Ibid., 128.

[176] Goerlitz, 231-232.

Many other subterfuges were employed by the German military leaders and industrialists during this period of secret rearmament. In the firm of Rhein-Metall, the railway coach department began producing artillery pieces. In 1922, Krupp began developing new heavy artillery designs for the Reichswehr; and in 1925 that firm began designs for a "large scale tractor" (tank) mounting a 7.5 cm gun. Submarines were constructed in Dutch and Spanish shipyards. The secret and close relationship between the Army and industrialists was further strengthened when, from 1926 onwards, industrial specialists were voluntarily attached to the staffs of all military districts (Wehrkreisie).[177]

One of the most significant developments for the fledgling Reichswehr occurred in 1924 with the creation of the then highly secret Economic General Staff, known as the Replacement Staff (Nachschubstab), under General Wurzbacker. At the beginning of World War I, von Seeckt saw at first hand the problems encountered when the economic element of power was not considered in military contingency planning. He was also aware of the contributions of the Rathenau System of war production and how it kept the Reich in the war for over four years. Because of this recent experience, Seeckt was determined to couple economic planning with military strategy to maximize

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[177]Goerlitz, 246-247.

the power of the nation.

The Replacements" Staff was formed in November 1924 with four officers and two civilian consultants. Its main functions were to prepare plans for the economic mobilization of the Republic to support a 68 division army. Additionally, the Nachschubstab was to provide centralized, long-term planning and preparation for general industrial mobilization.[178] This staff, later known as the Armaments Office (Rustungsamt), received a warm welcome from the heavy industrial community in accomplishing its mission. The industrialists of Germany saw the opportunity of rebuilding their armaments plants, which were largely dismantled and destroyed under the supervision of the Allied Control Commission. Foreign industrialists in Austria, Switzerland, Sweden, Holland, and Italy, also cooperated with the Rustungsamt by providing information and accepting armaments contracts.[179]

By 1928 the Replacements' Staff had grown to six major sections and occupied twenty-five offices in the Armaments' Office. At this time the agency's name was changed from the

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[178]Berenice A. Carroll, Design for Total War, (Providence R.I.: Brown University, 1960), Ph.D. Thesis, 17.

[179]Wheeler-Bennett, 142-144.

Replacements' Staff to the Economic Staff (Wirtschaftstab). While the Economic Staff was involved in illegal procurement of arms in Germany, it was not involved in the clandestine activities of GEFU in Russia. The Waffenamt handled this part of the material acquisition program.[180]

As the Wirtschaftstab grew in size, its responsibilities were increased correspondingly. Complying with its charter, the Economic Staff began compiling exhaustive reference files on the war production capability of the national industrial base. To get this information, a series of questionnaires were developed and sent to every production facility within the Republic.[181] Needless to say, the full cooperation of the industrialist was essential to make this program a success. In this manner, the Wirtschaftstab had at its disposal accurate data concerning industry's capability to support a war production program. Requirements for raw materials, labor, transport, power, and machinery were identified. For example, this staff knew of every piece of machinery capable of being used for or converted to war production in Germany. Each machine was

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[180] Carroll, 201-21.

[181] A. D. Strenger, "Insight into the Nazi Industrial War Machine," (Prepared copy of a speech delivered in 1943), 10, 16-17. Also see Appendix B, for sample questionnaires.

identified by several criteria: a) location; b) age of the machine; c) expected useful life; d) type product to be produced; e) quantity of output; f) conversion time (if necessary); and g) raw materials necessary for production of war goods.[182]

The information required by the Wirtschaftstab was gathered in several ways. The industrialists provided much of the information by responding to questionnaires. Another method used to gather information resulted from the introduction of Economic Officers (Wirtschaftoffiziere, or W.O.), into the various military districts. In addition to providing data, the Wirtschaftoffiziere served as the interface between the Army and industry on the local level. From this position, the Economic Officers were able to provide the Economic Staff with current capabilities on a timely basis. Lastly, the Statistics Company (Statistische Gesellschaft), was formed within the Economic Staff, to collate the data gathered, prepare questionnaires, and record and analyze the findings.[183]

In addition to determining Germany's capability to produce war materials, the Economic Staff set up an economic

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[182] Strenger, 12.

[183] Carroll, 23.

intelligence division which concentrated on identifying the sources of raw materials, production capabilities, and technological breakthroughs in the other countries of the world. Primary emphasis was placed on Continental Europe. The information provided by the intelligence division and the theories of Dr. Karl Albrecht Haushofer played a very important part in Hitler's plans for the conquest of Europe.[184]

When originally chartered, the Nachschubstab was charged with centralized economic planning responsibilities for preparing the nation for the possibility of future war. During war it was envisioned that the Economic General Staff would assume responsibility for directing the entire national war economy. Rathenau's imprint is clearly seen here.

While in existence the Nachschubstab, later its successor organizations the Rustungsamt, the Wehrwirtschaftsstab, and the Wehrwirtschafts-und Rustungsamt, continuously attempted by various means to gain the authority commensurate with its responsibilities in all matters concerning war production. This was a matter of prime concern for Georg Thomas (1890-), who headed the Economic Staff during the 1930's until it was absorbed into the Speer Ministry in 1943. Thomas' goal was not achieved.[185]

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[184]Strenger, 35.

[185]Carroll, 237-239.

Through various decisions Hitler managed to stifle the Army's call for the appointment of an Economic Dictator. One of the more serious decisions which robbed the Economic Staff of its desired authority was: the military services were permitted to continue their individual dealings with private industry without going through the Economic Staff. This made it impossible for the Wehrwirtschaftsstab to control resources or establish priorities. Hermann Goering's (1893-1946) appointment to head the new Four Year Plan in 1936 put another stumbling block in the path of a centrally controlled economy. With his charter under the Four Year Plan, Goering ineptly meddled in economic affairs. Hitler had a fetish of assigning high priority projects to trouble-shooters such as Fritz Todt (1891-1942), and giving them sweeping authority to accomplish the projects. Whenever the project was completed, or there was no longer a need for this economic authority, it was not usually withdrawn. By doing so Hitler added to the chaos that was present in the economy. Goerlitz suggests that the proliferation of agencies, organizations, and individuals with overlapping responsibilities was Hitler's way of preventing any one individual from gaining too much ppower and becoming a rival.[186] If this was the Fuehrer's intent, he accomplished

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[186]Goerlitz, 341.

what he set out to do.

Under the Nazi dictatorship centralized control over the economy should have been easy to achieve. The Reichsehr presented Hitler with the necessary organization to exercise centralized control over the economy--the Economic General Staff. Additionally, when the Fuehrer came to power, he had at his disposal information concerning the war potential of the nation and the cooperation of heavy industry. Unfortunately for the Third Reich, the Chancellor chose not to make full use of the assets available to him. Instead, he was enthralled with the accomplishments of Frederick the Great, the strategies of Bismarck, von Moltke, and von Schlieffen. Based on this romance with the past, besides his growing fascination with the potential of mechanized warfare, Hitler chose to adopt the single military strategy of Lightning War (Blitzkrieg) as the means to achieve his goals. Economically unprepared for total war, nevertheless Nazi Germany launched her wars of aggression with the invasion of Poland in September 1939.

CHAPTER IV

WORLD WAR II AND THE SPEER SYSTEM

During the periods of secret (1933-35) and open (1935-39) rearmament, Adolf Hitler proved himself to be an able diplomat. By constantly testing the resolve of his probable opponents (France, England, and Russia), he was able to predict with some accuracy the risks involved in his various adventures. When Hitler ordered the reoccupation of the Rhineland, against the advice of his military leaders, he was prepared to withdraw his forces should any significant opposition take place. Hitler, however, did not believe that this action would be violently opposed, and events proved him to be correct.[187]

The remilitarization of the Rhineland in 1936; Anschluss (union) with Austria on March 12, 1938; the abandonment of Czechoslovakia to Hitler by the British and French at the Munich Conference on September 30, 1938; and the relatively unopposed Nazi invasion of the remainder of Czechoslovakia on March 15, 1939; boosted the stature of the Nazis in Germany to unprecedented heights. In the eyes of the Germans these "bloodless" victories were wonderous to behold. They raised the national pride and

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[187]Harold C. Deutsch, The Conspiracy Against Hitler In The Twilight War, (Minneapolis: University of Minnesota Press, 1968), 26, 30.

spirit from the depths of despair to the point where Hitler's protestations about the superiority of the German race seemed to make sense.

Goebbels' Propaganda Ministry exploited to the maximum each of Hitler's diplomatic and military achievements. By mid-1939 the German national will was firmly under the Fuehrer's control. It was difficult to argue with success. Thereafter, when Hitler spoke on the need for living space (Lebensraum), the people, reinforced by each diplomatic success, agreed with him. When he stated that Lebensraum must be secured by force, if necessary, there were no broad, violent objections. Their Leader knew best.

The only major objections to Germany's expansion by force came from the economists within the armed forces, men such as General Thomas. Thomas' objection to launching wars of conquest was not based on principle, but rather, the Reich's state of economic preparedness. He believed that Hitler's Blitzkrieg would eventually lead Germany into another world war -- a protracted war of attrition. Thomas felt that the nation should continue her economic preparations before undertaking any military adventures.[188]

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[188]Carroll, 185-187.

In order to achieve the maximum preparedness for war, Thomas continued to press openly for "armament-in-depth" (expanding existing industrial facilities and constructing new ones), as opposed to "armament-in-width" (increasing production in existing facilities) which was the official Nazi policy. Hitler chose armament-in-width for several reasons: it had the least impact on the civilian economy; this policy relied on using the industrial capacities of the occupied countries; the Blitzkrieg could be adequately supported by this concept; no prolonged expansion of industrial facilities was necessary; and the Fuehrer did not believe that total war would be the final outcome of his aggressive policy. Consequently, Thomas' call for armaments-in-depth fell on deaf ears; and he became known as the "Jeremiah of doom" in high Nazi circles.[189]

After signing the Non-aggression Pact with the Soviet Union in 1939, thereby precluding the possibility of a two-front war, Hitler embarked on the military conquest of Europe. On September 1, 1939, the Blitzkrieg was launched against Poland with devastating effect.

In its strategic concept, the Blitzkrieg bears a very strong resemblance to the techniques employed by von Bismarck

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[189]Joachim C. Fest, Hitler, (New York: Harcourt, Brace, Jovanovich, Inc., 1973), tr. by Richard and Clara Winston, 676.

and perfected by von Schlieffen. Wars were aimed at achieving a strategic stranglehold over the enemy. The objectives of the military action were carefully selected to achieve the most decisive results, either secure territorial advantage, or defeat enemy forces. Mobility, firepower, and surprise were the key elements used to achieve strategic advantage. Translated into today's terms, Blitzkrieg was a limited war strategy.

Hitler, when adopting the Lightning War concept, realized that Germany possessed finite resources (raw materials and manpower), which must be used with great care in order to achieve prompt results.[190] Additionally, he recognized that Germany could not hold out indefinitely in a war of attrition against the other industrial nations of the world. The First World War had proven this quite clearly in his mind. Finally, Hitler was aware that excessive privation of the civilian, as well as the military, sectors of the nation would endanger his regime (another lesson from the Great War).

In attempting to apply the lessons learned during World War I, while at the same time making economic preparations to achieve his expansionist desires, the Fuehrer chose the Blitzkrieg strategy. The economic support of this military concept entailed: short but intensive bursts of economic

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[190]Carroll, 209-210.

effort (increase in production, not facilities); continue providing consumer goods for the public; state-supported preferential treatment for heavy industry on the terms of "business as usual" approach; and as little disruption as possible to the civilian sector (shifting of work forces to new factories, etc.). Hitler thought this method of warfare might avoid the hardships that total war brought to the civilian population.[191]

The Blitzkrieg was an extremely flexible strategy for limited war. It could be tailored to suit the target country with economic preparations made in advance. This strategy found wide support among the civilians, industrialists, and eventually the military. By minimizing civilian sacrifice, the Nazi Party improved its political standing. Big business supported the Party's strategy because of the profit motive and it required no large, competitive increases in facilities, only production.[192] The military doubters were won over by the successes of the Blitzkrieg in Poland, Denmark, Norway, and France.

In addition to enhancing Germany's political and military stature, the Lightning War was very instrumental in adding to the Reich's industrial capacity. Some of the countries

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[191] Milward, 7.

[192] U.S.S.B.S., 21.

occupied by the Nazis (e.g., Belgium and Northern France) were among the most industrialized in the world. Their added industrial facilities, stockpiles and sources of raw materials and manpower, immensely aided the German war-effort. The heavy industries of Austria, Czechoslovakia, and France were of particular importance to Hitler.[193] This enabled the Fuehrer to "rattle his saber" throughout un-occupied Europe and intimidate those countries he chose not to conquer.

It looked for a while as thoug nothing could stand in the way of the Blitzkrieg; however, Hitler, like Napoleon before him, underestimated the Russians and made the decision to invade the Soviet Union. John G. Stoessinger suggests in Why Nations Go to War that the overriding consideration which influenced Hitler to invade Russia was his contempt and hatred of Slavs and Communists.[194] While Stoessinger's comments about Hitler's obsession with Slavs and Communists are certainly true, this hatred was not the overriding factor in Hitler's

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[193] Louis Domeratzky, "The Industrial Power of the Nazis," Foreign Affairs, Vol. XIX (April, 1941), 642-644.

[194] John G. Stossinger, Why Nations Go To War, (New York: St. Martin's Press, 1974), 34-36.

decision. The Fuehrer's decision was based on several factors. First of all, the Nazis correctly perceived the weakness of the Red Army as a result of the purges of the 1930's. The poor military performance by the Soviets in the Russo-Finnish War validated this perception. Secondly, the Germans believed that the bulk of Russian industrial facilities were located in a vulnerable position--West Russia. This weakness could be exploited using the Blitzkrieg. Finally, Hitler believed the East was where the Reich's Lebensraum could be found. It was in Russia that German requirements for raw materials and foodstuffs could be satisfied, at least temporarily.

The Fuehrer Directive Number 21, dated December 18, 1940, clearly stated that after crushing the Red Army in Western Russia, the objective in the South would be the capture of the Donets Basin, which was of vital importance to Germany's war industry. In the North the capture of Moscow (with her industries and railnets) would represent a decisive political and economic victory, while also serving to disrupt the railway transportation industry West of the Urals. Subsequent to the capture of the Donets Basin and Moscow, the Ural Mountains were to be taken. Hitler believed this to be the last surviving industrialized area in the Soviet Union.[195] The substance

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[195] H. R. Trevor-Roper, ed., Blitzkrieg to Defeat: Hitler's War Directives 1939-1945, (New York: Holt, Rinehart, and Winston, 1965), 49-51.

of this directive suggests that economics played a key role in Hitler's decision to invade Russia.

What Hitler failed to recognize prior to initiating Case Barbarossa (the invasion of Russia), besides Operation Sea-Lion (the invasion of England), was the inherent limitations in the Blitzkrieg strategy. To begin with, the Germany Army at the beginning of World War II was neither motorized nor mechanized to the degree popularly imagined. In September 1939, the Wehrmacht only had seven tank divisions, five motorized infantry and four "light" divisions in the force structure. The remaining 90 divisions were almost completely dependent upon railroads, horse-drawn carts, or their own feet for strategic mobility.[196]

Employment of these forces was based on the double envelopment. The mechanized and motorized units were expected to penetrate enemy lines, and encircle the defending force in a giant "boiling-pot" (Kesselschlacht) configuration. Once this was accomplished the bulk of the army could be brought to bear in delivering the coup de grace. It was a land-based strategy that was dependent upon the speed with which the bulk of the Wehrmacht could be deployed and committed to battle. This doctrine, which was based on the marching speed of infantry

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[196]Addington, 41.

units, envisiaged encirclement and annihilation of enemy forces relatively close to the German borders. It was not designed for employment against insular countries, such as England, nor countries with large land areas which would permit maneuver.[197]

Other serious limitations of the Blitzkrieg which were not immediately recognized were: the inadequacy of a logistical re-supply capability (lack of trucks and roads); an overreliance was placed on the use of railroads. The Luftwaffe, because of its initial "easy" victories, was not aware of its own limitations. German aircraft was designed to support the Blitzkrieg. Because of this, range was sacrificed, and strategic bombers took a back seat to fighter aircraft. Additionally, the Luftwaffe's planes lacked the necessary armor protection which became so vital later in the war. The final major drawback of the Lightning War was that it did not have a trained reserve manpower pool to draw upon to replace battle casualties.[198]

These limitations were not apparent to any significant degree when the Nazis were operating on interior lines of communications against neighboring countries such as Austria, Czechoslovakia, Poland, Denmark, Norway, Belgium, Holland, and

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[197]Addington, 216.

[198]Ibid., 39.

France. It was only when Hitler unsuccessfully attempted to use the Blitzkrieg against Great Britain in 1940 that some of the strategic limitations first appeared. Germany did not have the naval or air force capability to support the cross-Channel operation. The General Staff had not prepared plans in advance for an amphibious assault of England. In fact, the General Staff did not have any sound doctrine on large-scale amphibious operations on which to base their planning. Planning was initiated; however, the German Navy was not strong enough to control the relatively small English Channel in support of an army landing. Eventually, Operation Sea-Lion was cancelled. Hitler turned his attention to the East. He hoped that by conquering Russia, he could take England out of the war. During the Battle for Britain, the Blitzkrieg had failed to achieve its objective in an admittedly unique situation.

The initial failure of his strategy did not appear to cause Hitler any real concern. Instead of triggering some reflective thinking, Hitler decided to apply the Blitzkrieg against Russia. This would be a continental battle. No new doctrine or equipment had to be prepared to implement it. The same techniques used against Poland were to be applied only on a much larger scale.

On June 22, 1941, the Wehrmacht invaded Russia. The initial operations were so successful, that on July 14, 1941,

Fuehrer Directive Number 32a was issued. In substance this directive forecast an early victory in Russia and ordered a cutback in the production of armaments. Additionally, selected war industries were ordered to convert to a peace-time footing. Raw materials that had been reserved for war production were released for production of consumer goods. All contracts for weapons, munitions, and equipment which extended beyond six months were cancelled. Finally, an impending cutback in the size of the armed forces was announced.[199]

Hitler's issuance of Directive 32a was quite premature under the circumstances, as General Timoshenko's successful stand before Moscow was to prove. Directive 32a resulted in a reorientation in economic planning which proved debilitating to the German Army in the Winter of 1941-42. Hitler had the mistaken belief that he could command the industrial operations in the same manner he commanded military forces in the field. The Fuehrer apparently did not realize that his constantly changing demands and priorities reduced the efficiency of his industrial base.

An extreme example of the effect of changing priorities on industry was the experience of the Henschel firm--a prime producer on the Ju 88 fighter for the Luftwaffe. In 1940

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[199] Trevor-Roper, 82-84.

Henschel was ordered to convert its facilities to produce the HS 129 bomber. When half complete with the conversion, the firm was ordered to switch to production of JU 188 aircraft. When finally prepared to start production, Henschel was ordered to retool again to the manufacture of ME 410's. Again, before the conversion was complete, the company was told to change to the Ju 388. This time Henschel finally got the aircraft into production, only to find the Air Ministry had decided to abandon its bomber program. Henschel was ordered to resume production of the Ju 88 fighter. It has been estimated that losses in aircraft because of frequent changes in models amounted to 20 percent of the total production in 1942.[200]

The Russian stand before Moscow marked the first time that the Blitzkrieg had been defeated on the European Continent. Timoschenko's forces destroyed the myth of infallibility long-held by strategists on the Blitzkrieg, while confronting the Nazi leadership with the first shock of defeat. This setback cost the German Army great losses in men, arms, and equipment, which were initially difficult to replace because of Hitler's premature issuance of Directive 32a.

In December 1941 the Fuehrer began to realize that his economic preparations may have been inadequate. With the entry

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[200]Carroll, 192-193.

of the United States into the war against the Third Reich, Hitler found himself in the unenviable position of being opposed by three of the greatest industrial powers of the world--Great Britain, the Soviet Union, and the United States.

To rectify the situation, Hitler directed Fritz Todt, Minister of Armaments and Munitions, to undertake an extensive reorganization of the productive facilities under his supervision. Todt found it almost impossible to convert the industrial base from one of width to one of depth to support a war of attrition. The conversion would have caused an initial cut-back in much needed supplies. His only alternative was to squeeze as much production as possible out of existing facilities. At this point it became very obvious to insiders that Germany was ill-prepared, economically, for a long total war.[201]

The initial successes of the Blitzkrieg had a profound effect on military and economic thinking in the Reich. These successes led the Nazi leaders to believe in their own invincibility, which ultimately resulted in the invasion of Russia. The apparent success of the economic preparations precluded any change and stymied purposeful centralized planning over the country's economy. Consequently, the German economy during

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[201] Stolper, 164.

the first three years of war was a "butter and bullets" one operating in a leisurely, semi-peacetime fashion.[202] During this period the unique feature of Germany's war-effort was the relatively low output in armaments production. Considering the resources and industrial facilities available to the Reich, and her subsequent accomplishments in production, it became apparent that Germany's war production was not limited by potential, but rather by the whims of Hitler, as to what he considered necessary to achieve his aims.[203]

Many scholars have taken the stand that Hitler was preparing for total war during the early years of his regime. They attribute the Fuehrer's success in rearmament to economic "efficiency" and the Nazi form of government--a dictatorship. The dictatorship supposedly provided the Nazi Leader with the necessary powers to centralize and control all aspects of the economy. It was through this centralized effort that all sectors of the civilian economy were subordinated to the state-directed task of war production.[204]

While this thesis appeared to be valid to foreigners and many people within Germany, a close examination of the

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[202] U.S.S.B.S., 23.

[203] Ibid., 6.

[204] Carroll, 1-2.

period 1933-39 quickly reveals its inaccuracy. Great strides were made in the economic field during the era of the Third Reich; however, the dictatorship never instituted centralized control over the economy. Quite the opposite was true. Germany's economy was in fact decentralized, fragmented, and in a state of constant confusion. The principal reason for this economic disorder was the proliferation of multiple agencies, departments, and bureaus charged with often overlapping economic responsibilities. When these various offices ceased to function, they were not dissolved; rather they continued to exercise their authority to the detriment of sound economic planning.[205]

During the mid-1930's General Georg Thomas of the Wi Ru Amt had called for the appointment of an Economic Dictator. The latter was to be charged with the overall responsibility of centralizing and controlling all aspects of the German economy. Thomas felt that the Economic Dictator (subordinate to Hitler, of course) should come from the Army; however, he would have settled for any strong military man. When on May 31, 1935, Hitler appointed Hjalmar Schacht, Chief Authority for the War Economy (General-bevollmachtigter fur die Kriegswirtschaft, or G.B.K.), Thomas and the Army had serious doubts.

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[205]Norman Rich, Hitler's War Aims, (2 vols.; New York: W. W. Norton & Co., 1973), I, 59.

They never envisioned a civilian being appointed to this post, and some believed that the Wehrmacht's position in economic planning would be jeopardized.[206] The Army's fears about Schacht were in vain. In 1938, Schacht was forced from the Nazi Cabinet when he criticized Hitler's methods and plans for strip-mining the economy (Raubbau) to support aggressive wars.[207]

Hitler's growing lack of faith in the senior military leaders was again manifested by the appointment of Dr. Fritz Todt, a civilian, as Plenipotentiary-General for the Control of Building, in December 1938. By this appointment Todt became responsible for construction to include Wehrmacht projects. Todt's successes in his various economic projects for Hitler led to his appointment as Germany's first Minister of Armaments and Munitions on March 17, 1940.[208]

While the title Minister of Armaments and Munitions appears to be very broad and all encompassing, Todt's activities in this area were restricted almost entirely to the Army. The control of the Navy and Air Force procurement programs remained with their respective armaments' branches.

There were several reasons for Todt's appointment.

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[206] Carroll, 103-104.

[207] Rich, I, 535-538.

[208] Milward, 57-58.

First of all, he was a well known organizer and administrator. He successfully accomplished many tough projects for the Fuehrer. Because of this, Hitler had implicit faith in Todt. A more significant reason for the appointment was that Hitler was beginning to become annoyed at the "defeatist" or "we cannot" attitude held by some Army leaders. These men wanted the Fuehrer to proceed more cautiously in his political ambitions.

General Thomas had repeatedly warned Hitler of Germany's poor economic standing to wage war. Thomas' latest warning had been at the outset of the Polish Campaign. During the relatively short war against Poland, Thomas' predictions were proven valid and the Army experienced some serious shortages of munitions. At the beginning of the war, the Wehrmacht only had six weeks of reserve munitions; and this figure was misleading because the consumption rate exceeded the planners' estimates from two to eight times.[209]

While the shortage of munitions did not prove to be critical, as earlier feared, it could have been, if the German Army would have to fight the French or English concurrently with the Poles. Hitler held the Army responsible for this minor crisis and retaliated the next Spring with Todt's appointment.

Todt was one of the Fuehrer's chief trouble-shooters for quite some time. In June 1933 he became Inspector-General

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[209]Carroll, 200-201.

of the German Highway System and was responsible for the Autobahn projects. In December 1938 Todt was appointed Commissioner General for the Construction Industry. In this capacity he was responsible for projects involving civilian and military construction throughout Germany. (This was later expanded to include the occupied territories.) Additionally, Todt held the position as Inspector-General for Waterways and Power Plants. To assist him in fulfilling his manifold responsibilities, Todt created the Organisation Todt (O.T.). The O.T. was a paramilitary organization which dealt mainly with construction of fortifications (e.g., the West Wall, U-boat pens, etc.)[210]

Upon assuming the additional responsibility as Minister of Armaments and Munition, Todt saw that his most immediate need was to eliminate several layers of overlapping bureaucracy, which he found in the Wehrmacht and other sections of the economy.[211] Todt believed that the best way to accomplish this vital task, and to increase production of Army armaments and munitions, was to put technical direction of industry back in the hands of the industrialists. In order to do this, Todt established series of committees to control production. Very

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[210]Arnold and Veronica M. Toynbee, ed., Survey of International Affairs 1939-1946: Hitler's Europe, (London: Oxford University Press, 1954), 237.

[211]Milward, 59.

basically, the committees were organized in the following manner. A main committee controlled the munitions industry (Hauptausschuss). Under the main committee were a series of special committees (Sonderausschusse), charged with specific types of ammunition production.[212]

The main committee had a broad range of responsibilities. It controlled all factories making munitions. The Hauptausschuss was responsible for pooling knowledge of production techniques and maintaining statistics on productivity of the various factories under its control. Additionally, the main committee was responsible for implementing a program to standardize equipment and munitions produced. Movement of machinery and labor from factory to factory was strictly controlled by the main committee. Furthermore, the main committee was responsible for allocating its share of the raw materials to the factories under its control. This enabled the Hauptausschuss to selectively distribute resources to the most productive facilities and meet its required delivery dates for finished products.[213]

Alan Milward in his book The German Economy at War argues the committee system of war production was originated by Todt and not his successor Albert Speer. Milward believes

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[212]Milward, 60.

[213]Ibid.

that too many historians, such as Burton Klein, have credited Speer with this system of production which played so important a role in lengthening the Second World War. Milward, however, is only partially correct. Speer, by his own admission, did not invent the committee technique, but neither did Fritz Todt. Both of these administrators adopted the Rathenau System of war production, which was used so effectively during the First World War.

While both Todt and Speer proved themselves to be very capable organizers, Todt's record in the realm of war production is less impressive. This was due, perhaps, to several factors, chief among these were: his overwhelming preoccupation with the construction portion of his responsibilities; his lack of real control over the economy; Hitler's economic policies of Blitzkrieg; and his untimely death on February 8, 1942.[214]

The contributions of occupied countries to the industrial strength of Germany was immense. In addition to agricultural goods, the Nazis gained control over the industrialized districts of Upper Silesia when Poland was conquered. The conquest of Denmark and Norway was planned to gain access of Norwegian raw materials; and ostensibly to isolate Sweden from

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[214]Wright, 61.

the Allies, thereby securing uninterrupted access to iron-ore and industrial finished products. The subjugation of the Low Countries and France, with their natural resources and highly developed industrial facilities, contributed significantly to Germany's economic posture for continued warfare. The Bor copper mines in Yugoslavia; the iron of Austria; and the industrial facilities of Czechoslovakia all played an important role in the Reich's war effort. By the Summer of 1941 Germany's acquisition of additional sources of raw materials and industrial facilities in Russia led Hitler to believe that the problems of having enough raw materials were at an end.[215]

Arnold Toynbee believes that Germany had the capability of arming-in-depth as late as the winter of 1941-42, but because the then existing industrial capacity was sufficient, no changes were made.[216] It can be argued that with the invasion of Russia in June 1941, the Germans lost their last opportunity to arm-in depth. Five months later the Wehrmacht lost the initiative and became involved in a protracted conflict. Five months would have hardly been sufficient time for Germany to reorient her economic programs, much less construct or convert the necessary facilities for armament-in-depth.[217] In addition to the

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[215] Toynbee, 188-189.

[216] Ibid., 189.

[217] See Table 7 in Appendix for statistics on iron and steel, coal, and oil available to Germany from occupied and allied countries.

sources of raw materials from occupied countries and her allies, Germany intimidated other nations in Europe into providing her with the resources she needed for her war-effort. With the Nazis on their borders and invasion a possibility, countries such as Sweden, Switzerland, Spain, Portugal, and Turkey had little choice but to comply with German demands. These nations provided the Reich mainly with strategic metals such as zinc, chromite, maganese, magnesium, tungsten, copper, wolfram, and tin.[218] Sweden's major contribution was ten million tons of iron ore annually.[219]

Dr. Strenger, an industrialist under Hitler during the early 1930's, postulated that the pattern of the Fuehrer's conquests was based on economics and geopolitics.[220] With the exception of Denmark, each country absorbed, or allied with the Third Reich, added to the Nazi industrial base with human and natural resources besides industrial facilities. Additionally, each of these nations was of territorial importance to Germany either as a stepping stone to the next target, or as a bulwark from which to defend the expanding Reich.

With the natural resources and highly developed industrial plants of Europe at his disposal, it is difficult to

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[218] Strenger, 37-64.

[219] Milward, 48.

[220] Strenger, 43.

imagine that Hitler did not reap the full benefit from these advantages. This is interesting because the Fuehrer had outlined economic objectives in his war directives. These additional facilities could have provided the armament-in-depth that Thomas and others so urgently wanted. This was, however, not the case. The economic planners in the Third Reich had failed to develop comprehensive contingency plans for the systematic exploitation of the occupied countries.

The failure of the Nazis to orderly exploit the industrial potential of the occupied countries can be attributed to the lack of centralized economic planning in Germany herself. The various economic agencies, departments and bureaus worked in a vacuum attempting to further their own rather specific roles. This lack of foresight resulted in the unorganized rape and robbery of the occupied countries characteristic of the First World War. The agency that got there first plundered the country, often to the detriment of the other competing agencies within the same country.

Milward and other historians have identified the failure to amalgamate the occupied countries economies into one German economy as a major reason for the failure of the Blitzkrieg. This coupled with the proliferation of competing economic agencies operating sans centralized guidance, led to what has been called a "smash and grab" policy in the occupied countries.[221]

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[221]Milward, 49 and 52.

There can be little doubt that failure to take full advantage of the potential of the occupied countries demonstrated a major weakness in the Nazi economic machinery.

A. D. Strenger presented a conflicting point of view on this subject in a speech in 1942. Strenger believed that the Nazis fully exploited the occupied countries, however, in arguing that these areas "solved" Hitler's problems of production.[222] There can be no doubt that the occupied countries were exploited, but they were not exploited systematically, nor to their full potential. Were this done, their contributions to Hitler's war-efforts would have been much greater.

There are two "schools of thought" concerning the turning point for Germany during the Second World War. One group of historians comprised of men such as Hojo Holborn, Gordon Wright, Arnold Toynbee, and Burton Klein, subscribe to the thesis that Hitler's defeat at Stalingrad was the critical turning point.[223] The other group of scholars represented by men such as Alan Milward, Larry Addington, and Walter Goerlitz, postulate that the turning point occurred in December 1941 with the failure of the Blitzkrieg before Moscow.[224] A precise date may never

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[222] Strenger, 43.

[223] Holborn, III, 805; Wright, 194; Klein, 203; and Toynbee, 32 and 191.

[224] Milward, 56; Addington, 215; and Goerlitz, 408.

be agreed upon since the scholars' perspective (i.e., economic, military, political), is fundamental to the determination.

For the purpose of this study the significance of determining as closely as possible the turning point in the war is that it marks a crucial change or reorientation of military strategy and economic support of the new strategy. From an economic standpoint, it is quite clear that Hitler perceived December 1941 as being decisive. His demands in industry for higher productivity and rationalization, as well as the increased authority he granted his Minister of Armaments of Munitions, Fritz Todt, point to this perception.

It was after the failure of the "eight-week" Blitzkrieg to subdue Russia, that Hitler recognized the necessity for gearing for total war. He gave up the concept of Blitzkrieg very grudgingly; however, notes from his conferences in early 1942 with Albert Speer, show that the Fuehrer was convinced to make a more strenuous economic effort in support of the war. While Speer's control over the German economy grew with his tenure in office, it was anything but complete. Hitler was reluctant to give any one man too much power, even a confidant and friend.

On February 9, 1942, the day after Todt's death in an airplane accident, Hitler summoned Albert Speer to his office. After an exchange of condolences over Todt's untimely death,

Hitler said: "Herr Speer, I appoint you the successor to Minister Todt in all his capacities."[225] Speer had been a personal friend of Todt's and had been working with him in the construction industry. The new Minister was also a long-time friend and the personal architect to Hitler.

As early as the Spring of 1939, Hitler informed Speer that he would be appointed Todt's successor in the construction industry, if anything ever happened to the old trouble-shooter.[226] Even with this forewarning, Speer claimed to be "thunderstruck" by his appointment as Todt's successor in all activities.[227] To many people Hitler's choice may have appeared irrational; nevertheless a closer examination of the circumstances indicate that Speer's selection was quite logical.

Speer and Todt had many common characteristics. They were both from middle-class Baden families. They were technicians at heart, and both men were basically apolitical by nature. As experienced administrators, they proved themselves as able organizers; especially since Todt and Speer operated as "trouble-shooters" on various projects for Hitler. Speer worked in the construction branch of the O.T. and was familiar with its operations. Finally, and most important, both of these men had direct access to Hitler while they enjoyed his confidence.

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[225] Speer, 195.

[226] Ibid., 194

[227] Ibid., 194-195.

While Todt's association with Hitler went back to the early days of the Party, Speer's association was more recent and initially on another level. As a young architect, Speer was commissioned by Goebbels to rebuild a new district headquarters building for the NSDAP in 1932. In 1933 Speer was brought to Berlin by Goebbels and given various building commissions. It was through Speer's connection with Goebbels, that he finally came to the Fuehrer's attention. When Hitler's Munich architect, Paul L. Troost, was commissioned to refurbish completely the Chancellor's residence in Berlin, Hitler had Speer assigned to Troost's staff.[228]

Through his work on the Chancellory, Speer became better acquainted with Hitler. Impressed with Speer's works on the various projects assigned to him, the Fuehrer began to keep a closer eye on him. For quite some time Hitler searched for a promising young architect, one who could design the gigantic building program he envisioned to memorialize the Third Reich. After Troost's death, Speer became a regular member of Hitler's entourage; and the architect and the dictator spent many hours together discussing architectural designs.[229]

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[228] Speer, 25-28.

[229] Ibid., 50-51.

Speer has described his early association with Hitler as an artist to would-be artist relationship. That is to say, politics were not a part of the relationship. Hitler fancied himself an architect; and by having Speer around, he could relax and concentrate on artistic rather than political matters. In any case, throughout the middle and late 1930's, Speer was a close associate of the Fuehrer's. It was during this period that they got to know each other very well. Hitler was impressed by Speer's abilities, and Speer was enthralled by Hitler's dynamic personality.

At the time of Speer's appointment in February 1942, it was not anticipated that he would make any radical changes in the economy. On the day of his appointment, Goering attempted to secure control of Todt's responsibilities within the framework of the Four Year Plan; however, in front of Speer, Hitler informed the Reich's Marshall that he had entrusted all of Todt's responsibilities to Speer. The tone of Hitler's voice was so unequivocal that Goering seemed stunned and alarmed. After regaining his composure, Goering left the Fuehrer's office without congratulating Speer on his new assignment.[230]

Goering and Todt were never the best of friends. They were competitors not only for Hitler's favor, but also for the

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[230]Speer, 195-196.

limited resources of the Reich. Each had several economic commissions, and each pulled whatever strings were necessary to insure he received the proper priority on his projects. Unfortunately for Speer, Goering's enmity for Todt was carried over into Speer's Ministry; and it proved to be one of the major stumbling blocks in gaining complete control over the economy.

Speer's first Fuehrer-Konferenz as Minister of Armaments and Munitions was on February 19, 1942. Between the time of his appointment and this conference, he conducted an initial analysis of the problems in production. At the conference Speer recommended the main committees, along with the Industrial Rings (Industrieringe), which was what Speer called the subcommittees, be expanded to include other areas of the economy vital to the war-effort. Speer also recommended that all appointments to the main committees, and Industrial Rings be made by him. His final recommendation at this initial conference, was that all personnel of importance in the armaments business over 55 years of age be required to appoint a deputy not older than 40 years old.[231]

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[231]American Historical Association, Guide to German Records Microfilmed at Alexandria, Virginia, (Washington: The National Archives, 1959), Records of the Reich Ministry for Armaments and War Production, No. 10, T-73, roll 192, FD 3353/43, vol.I, February 19, 1942, "Besprechungspunkte uber Reise zum Fuehrerhauptquartier," 8, hereafter designated as Speer Nachlass (SN).

Hitler readily approved Speer's recommendations and stated that he placed

> ...the greatest importance to peace-time planning and developments in all firms being stopped immediately. Contemplates heavy penalties and emphasizes that there will be time enough for this after the War, and also that industrialists must not make any sort of attempt, in the organization of their factories, to take account of peace-time purposes at this stage.[232]

This statement by Hitler indicated fairly conclusively that he sensed that it was time to abandon the economics of Blitzkrieg. As early as February 1942, the Fuehrer began gearing industry for the long war that he had so desperately tried to avoid.

As Minister of Armaments and Munitions, Speer had relatively little control over the economy. In the military sphere, the Air Force and the Navy were outside the realm of his authority. Under the rules then in force, even the Army retained the right to deal directly with industry. Speer found this situation to be intolerable, particularly from the standpoint of efficiency. Hitler looked to him to increase production, but Speer found too many players in this field.

During the first several months of his Ministry, Speer was able to gain increasing authority from Hitler in the area of armaments. At the Fuehrer-Conference on March 5-6,

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[232]Milward, 77.

1942, Hitler authorized Speer to establish War Utilization Companies (Kriegsverwertungs-Gesellschaft), which were to be similar to Rathenau's war companies of the First World War. On March 16, when Speer complained about the hijacking of armaments workers for Luftwaffe projects, Hitler directed that Speer's Ministry would have priority on the available labor assets.[233]

In order to gain some control over the critical labor situation, Speer had recommended that a Plenipotentiary for Labor Allocation (Generalbevollmachtigter fur den Arbeitsinsatz, or GBA), be appointed. The Minister told Hitler that he could not handle the new office personally, owing to his other responsibilities; but Speer did recommend an old friend, Hanke, for the job. Borman, the party secretary, fearing that Speer was becoming too powerful, vetoed Hanke's nomination, and recommended Gauleiter Fritz Sauckel, a party croney, for the job. At the Fuehrer's-Conference on March 19, 1942, Hitler announced that Sauckel would head the GBA.[234]

At this same conference Speer made Hitler agree to speak to Goering in reference to the labor situation. He also convinced Hitler to deny Goering's request to separate the anti-aircraft artillery and bomb supplies from the Main Committee

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[233] S.N., roll 192, FD 3353/45, March 5-6, and 16, 1942.

[234] Milward, 80-81.

structure. Admiral Raeder asked Speer at this meeting to appoint the head of a newly organized Shipbuilding Main Committee. Speer appointed Staatsrat Blohm.[235] It was through the Main Committees, besides the War Companies, that Speer was able to indirectly influence those sectors of the war economy outside of his realm of official authority. He affected this indirect control through the allocation of raw materials.

Another important step towards centralized control over the economy was achieved by Speer on March 21-22, 1942. At a meeting with Hitler, Speer was given authority to refuse requisitions from the General Staff.[236] He used this authorization, along with the Fuehrer Command of March 21, 1942 announcing the expansion of the committee system, to establish himself as the sole intermediary between the High Command and industry.[237]

At the March 21-22, Fuehrer-Conference Speer finally convinced Hitler of the need for a centralized resources allocation and planning agency. The Central Planning Board (Zentrale Planung Abteilung), was born of this meeting. The

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[235] S.N., 3353/45, No. 192, March 19, 1942, paragraphs 10, 131, & 27.

[236] Ibid., March 20-21, 1942, paragraph 2.

[237] Ibid., 1434/46, No. 170, "Umstellung der Rustung," Verordnung zum Schutz der Rustungswirtschaft.

Board was to be responsible for the allocation of all critical raw materials.[238]

Speer was very concerned about Goering, and the influence the Reich's Marshall could wield in economic affairs. To circumvent anticipated interference, Speer convinced Hitler that the Central Planning Board should be set up within the framework of the Four Year Plan and that Goering should sign the authorizing document. The Zentrale Planung was organized with three permanent members: Speer, who represented the armaments industry; Paul Korner, representative of the Four Year Plan; and General Milch, an Air Force officer, the representative from the Wehrmacht. Speer's selection of Milch was designed to serve two purposes. First, it would placate Goering and secondly, it would bring the Luftwaffe into closer cooperation with Speer. The Luftwaffe had been the biggest thorn in Speer's side because of the influence of Goering.[239]

The Reich's Marshall did not favor the idea of Speer heading the Zentrale Planung. He saw this as a tremendous increase in the Armaments Minister's power and at the same time a diminishing of his own authority. After dragging his

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[238] S.N., 3353/45, No. 192, March 21-22, 1942, paragraph 44.

[239] Carroll, 230.

feet in this matter, Goering was ordered by Hitler to sign the authorizing document for Zentrale Planung at the Fuehrer-Conference on April 14-15, 1942.[240]

As head of the Central Planning Board, Speer was in a position to influence the German war economy much more so than any of his predecessors or contemporaries. Speer was now in a position to eliminate wasteful competition for existing supplies and by controlling allocations of raw materials, primarily steel, exert control over previously autonomous industrial groups and all sectors of the economy.[241] Zentrale Planung functioned in much the same manner as Rathenu's K.R.A.; however, raw materials in general were still "officially" handled through Funk's Ministry of Economics.

The High Command's Wi Ru Amt was incorporated into Speer's Ministry during the first week of May 1942.[242] It was at this point that some historians believe that the Nazi economy was ready to start producing for the war of attrition. While Speer worked organizational wonders in centralizing Germany's economy, the nation was not yet prepared for a long total war. Facts that support this conclusion are: most

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[240] S.N. 3363/45, No. 192, April 14-15, 1942, paragraph 15.

[241] Milward, 84.

[242] Ibid., 86-87.

factories were still working one shift; consumer goods continued to be produced in quantity; unessential construction continued; and the population was not fully mobilized to support the war-effort (relatively few women were working in factories).[243] The conditions just listed did not exist in the United States, Great Britain, nor the Soviet Union. By not fully utilizing available resources, it is obvious that Germany was not prepared to fight a war of attrition in 1942. As subsequent events point out the Nazi economy did not reach this [illegible] until the war was lost in late 1944.

Early in his ministry, Speer determined that there were only two ways in which he could give Hitler the desired increases in production. The first way was by a more efficient utilization of production potential; and the second method was to reduce civilian consumption. One of Speer's first actions was to try to get a cutback in non-essential industries. He was only moderately successful in this area, because the Gauleiters protested to Hitler. These party officials believed the cut-backs were unnecessary and that they would infringe upon the civilian standard of living. Hitler supported the Gauleiters' position. This caused Speer to intensify his study of the means

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[243] Klein, 200-202.

available of expanding production in existing industrial facilities. He determined the only way to accomplish the latter was to introduce assembly line methods of production; control the raw materials; utilize machinery and space to the utmost; and to amplify production programs.[244]

One of the prob m areas that Speer encountered was Robert Ley's Labor Fr..t and the trade organizations. The latter operated as strong pressure groups that were continually jockying for competitive advantage, monopolistic advantage, and postwar markets.[245] The trade organizations bitterly fought Speer's organizational changes and increase in power. They considered them as an attack against their established prerogatives. However, Hitler had decided that Speer was to have a decisive role in war production and Speers' opponents' objections were silenced. Armed with the Fuehrer's support, Speer moved ahead with a comprehensive plan of industrial self-responsibility, which was to account for the rapid rise in German armaments production.[246]

Fritz Todt had implemented a limited program of industrial self-responsibility, as had Field Marshall Milch of the Luftwaffe;

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[244] International Military Tribunal, Trial of the Major War Criminals, (42 vols.; Nuremberg: 1947-49), XVI, 436; hereafter designated as I.M.T.

[245] U.S.S.B.S., 24.

[246] Milward, 132.

however, it was not pursued to any great extent. It was only after Speer came to power, that the concept was expanded to its fullest. In his book Inside the Third Reich, Speer acknowledged, "The real creator of the concept of industrial self-responsibility was Walther Rathenau, the great Jewish organizer of the German economy during the First World War."[247]

Unlike Rathenau, Speer was not appointed to a position of power until the war was in its third year; however, both men were faced with the same problem; the conversion of a peace-time economy to a war-time footing. In both cases these administrators were required to organize the economy to support a war of attrition after the failure of their nation's limited war strategy.

The minutes of the Fuehrer-Conferences for the remainder of 1942 and 1943 clearly show Speer's growing authority in economic matters. On Speer's recommendation, Hitler authorized the designation "key worker" in the armaments industry. This precluded conscription of selected individuals for other civilian or military purposes. At their meeting on June 28-29, 1942, Speer convinced Hitler not to order a resumption of consumer goods production. At a later meeting on July 23-25, 1942,

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[247]Speer, 208.

Hitler agreed to Speer's recommendation that Boards of Directors (Aufsichtsraete), in armaments firms should consist of a maximum of 20 percent bankers and lawyers and the remaining positions to be occupied by industrial experts.[248] A month later Hitler ordered price controls imposed in the coal, iron, and semi-finished products industry at Speer's request.[249]

In September 1942, over the objections of the Trade Organizations and the Gauleiters, Hitler approved another of Speer's plans for increasing the efficiency of armaments production. This plan called for consolidating production. The losses of men and material in Russia had been much higher than predicted; and the German economy was beginning to strain itself in supporting a war of attrition. The consolidation of production, where possible, would relieve this strain. In essence of five factories making the same type product, two would be closed down. The remaining three factories would then work two shifts, as opposed to one. This technique would provide an increase in production, while at the same time release two factories with their machine tools for new production.[250]

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[248] S.N., FD 3353/45, No. 192, July 23-25, 1942, paragraph 39.

[249] Ibid., FD 3353/45, No. 192, August 10-12, 1942, paragraph 46.

[250] Ibid., FD 3353/45, No. 192, September 20-22, 1942, paragraph 23.

Four additional major decisions by Hitler greatly assisted Speer in his attempts to centralize the Nazi economy. In April 1943, the Fuehrer agreed to a reduction in consumer goods. These goods were not to be banned, but rather phased out of the system gradually. The main consideration here was not to alarm the civilian population.[251] At the June 26, 1943 Fuehrer-Conference, Hitler directed Speer to take over the Naval armaments program. During the same meeting it was decided that the remaining production and raw materials functions of Funk's Economics Ministry were to be absorbed by Speer and the Zentrale Planung.[252] At this point Speer's title was changed to Minister of Armaments and War Production to show his increased authority.

Even with this new authority, several aspects of the economy still fell outside Speer's realm of influence. First of all, the Air Force, at Goering's insistence, retained their own programs of production. the SS under Himmler had set up their own state within the state. Based on their charter from Hitler the SS established their own programs of production to which Speer had to allocate scarce raw materials. This was

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[251] S.N., FD 3353/45, No. 192, April 25, 1943, paragraph 4.

[252] Ibid., FD 3353/45, No. 192, June 26,1943, paragraphs 27 and 28.

a particularly sensitive area for Speer, because the SS's production techniques were extremely inefficient and wasteful.[253] This was one sector of the economy, however, where Speer never gained control.

Labor was a third area that eluded Speer's control. Fritz Sauckel's conscription policies, especially concerning skilled workers,proved to be a constant headache to Speer. In many instances the indiscriminate conscription of skilled workers was responsible for bottlenecks in production.[254] Complaints to Hitler only brought periodic relief to the problem; and this respite was generally associated with times of crisis in production.

Sauckel's relationship with Speer was anything but cooperative.[255] He was concerned with placating the Gauleiters and with ingratiating himself with Bormann and Hitler. In the realm of manpower, Sauckel's authority was very broad both in Germany and the occupied territories. In addition to supplying civilian laborers, he was responsible for military conscription. By having a number of industries classified as vital to

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[253] I.M.T., XVI, 472-73.

[254] Ibid., 445.

[255] Speer, 218-219.

the economy, and their skilled labor designated key workers, Speer was able to provide minimal protection for the war production effort.[256]

As the labor problem became more acute, Speer's industries were being manned by conscript labor from the occupied countries. Speer did not object to the use of conscript labor;[257] however, he felt that these workers would be more productive if used in the industrial facilities in their own countries. Because of this perception, Speer attempted to integrate the occupied countries into a German dominated war economy. This entailed the Reich putting a greater reliance on the occupied countries for war production needs. Under this program, each country was to be given a production quota and be required to meet it. To protect the occupied countries' industrial and labor resources, Speer introduced the designation "blocked," or "protected," factory (Sperrbetriebe).[258] This designation effectively blocked the transfer of workers from their factory to the interior of Germany.

The benefits of Speer's plan were obvious. Critical

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[256] Milward, 78.

[257] I.M.T., XVI, 459.

[258] Ibid., 458-459.

war industries would be dispersed throughout Europe and be more difficult for the Allies to bomb. The factories would be closer to the sources of raw materials, which in turn would aid existing transportation difficulties. The conscripted foreign labor could remain in their own countries and expected to be more productive, rather than rebellious. The overtaxed German industrial and transportation facilities would be relieved of the inordinate pressures they were under. Finally, Speer expected, in the long-term, this program would set the stage for an European economic community under German leadership when the war was concluded.[259]

In many respects Speer's proposed program bears a unique resemblance to Rathenau's Mitteleuropa concept. Strangely enough, Speer's program found its strongest support from a French technician and administrator. Jean Bichelonne, the Vichy Minister of Economy, was very enthusiastic about Speer's plan; however, Bichelonne warned that any further recruitment of French workers in great numbers would make implementation of the plan impossible. Speer agreed, and both men decided to declare French production, as a whole, "blocked industries."[260] Speer's plan was never adopted. When Sauckel heard of the plan,

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[259] Wright, 121-122.

[260] I.M.T., XVI, 462.

he went to Hitler in December 1943 and convinced him of the necessity of ordering the "...round-up of a million more French workers in 1944."[261] If Speer's plan had been adopted, it would have given the desperately needed "depth" to the Nazi war-effort.

Borrowed from Rathenau, while being modified to meet the needs of the times, Speer's system of war-production accomplished miracles. Its success can be attributed to inspired improvisation on the part of industry; the skillful administration of Speer and his subordinates; and the undeniable threat to the German nation.[262] Very basically, Speer's system required the following: Main Committees were established for the various major items (e.g., munitions, armaments, tanks, shipbuilding, etc.). These committees were headed by an industrial technician, appointed by Speer, who had achieved the greatest success with that particular product. Directive pools were established to allocate the necessary resources within the committees. Those factories that proved themselves to be inefficient or recalcitrant did not receive raw materials. Under Speer's orders, industrialists were required to share

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[261]Wright, 121-122.

[262]Milward, 128.

patents for the duration of the war. New production techniques resulting in increased output were also shared.[263]

Speer embarked on an intensive program to rationalize, standardize, and simplify armaments and munitions designs. To accomplish this, he organized Development Committees for each Main Committee which was concerned with research and development programs. This left the Main Committees free to concentrate on production; and, at the same time, enabled Speer to influence the designs for new equipment and armaments from the Wehrmacht.[264]

Speer took great pains to squeeze the maximum production out of each factory. To assist him in accomplishing this, he instituted a program whereby a single factory would be responsible for producing one end-item instead of three or four. This stopped a lot of competition for new contracts, along with the resultant loss of production owing to re-tooling in these factories.[265]

The most important aspect of the Rathenau System that Speer was able to convert for his own needs was control over raw materials. The Zentrale Planung, like the K.R.A. before it, became so powerful that most sectors of the economy bowed to its wishes or lost access to raw materials. It was Speer's

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[263] Speer, 208.

[264] Ibid.

[265] Ibid.

power in the Zentrale Planung, coupled with the increase in Allied bombing, that caused the Luftwaffe to give Speer responsibility for their productive needs in the Summer of 1944.[266]

Under Speer's guidance production of weapons, aircraft, and ammunition increased 300 percent in two and one-half years. Tank production increased almost 600 percent during the same period. Even so, both Hitler and Speer knew that in a war of attrition Germany could not match the industrial might of the United States, Great Britain, and the Soviet Union on a one-for-one production basis.[267]

Hitler, and to a great extent Speer, believed that the Reich's only chance of winning the war rested in her technological ability to maintain "qualitative" superiority over the Allies in weapons, equipment, and munitions. Both men knew Germany could not build more guns; but thought they could build better and more lethal ones. From mid-1942 to the Summer of 1944, qualitative superiority was the principle on which the war economy rested.[268]

While appearing to be a rational policy, qualitative

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[266]Klein, 221.

[267]Milward, 100-101.

[268]Ibid., 101.

superiority had one major drawback. As soon as the new items of equipment were fielded with the military forces, one of these items would fall into the hands of the enemy. Being a highly-developed industrial power, the enemy was soon able to exploit the advances in technology, then produce weapons, munitions, and equipment of comparable quality. This put an almost impossible strain on Nazi scientists. They found that it was very difficult to stay one step ahead of the enemy in technology. German industry also suffered from this program. Replacement of machinery and re-tooling to produce the new items of equipment required a lead-time. During this period production of other items was reduced. This resulted in fewer "conventional" items reaching the hands of the troops at a time when they were desperately needed.

When Speer persuaded Hitler to publish the Concentration Order of June 19, 1944, the policy of qualitative superiority was officially dropped in Germany. The idea shared by both Hitler and Speer directed the concentration of industrial effort on weapons already in series production, rather than on development of new systems.[269] Quantity, not quality, was determined to be the Reich's only hope.

The issuance of the Concentration Order marked another

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[269]Milward, 128.

drastic change in the Nazi war economy. It was only at this point that the government began gearing for total war in earnest. Greater restrictions were placed on consumer goods and labor.

The gains achieved by this new policy were short-lived. The labor freed by the Concentration Order did not find its way into the armaments industry for the battle of production capabilities. These men for the most part were drafted into the armed forces. On October 18, 1944, Hitler made another decision which further reduced the capability of the armaments industry to satisfy his needs. On that date the Fuehrer created the Volkssturm. This marked the end of civilian status within the Reich. All men between the ages of sixteen and sixty, with few exceptions came under the control of the High Command. Ironically, with the exception of a few highly skilled technicians, armaments workers were included in the call up. In Hitler's mind it was more important for men to shoot weapons than to make them.[270]

Speer's assumption of the duties of Minister of Armaments and Munitions coincided with the intensification of the Allied bombing of Germany. What is amazing about Speer's achievements in production is that the more bombs the Allies

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[270] Milward, 129.

dropped on his industrial facilities, the more he seemed to produce. This was true through the Fall of 1944.[271] The explanation for this phenomena is a combination of Allied bombing strategy and of Speer's system of war-production. These factors enabled the Nazis to increase their industrial output to unparalleled heights despite the air raids.

Speer has suggested that the air raids, in effect, assisted him in his efforts to mobilize the population. The air raids, coupled with the Allied demands for "unconditional surrender" created an environment of constant threat and national danger, which moved the people to make even greater sacrifices. The Allied governments were constantly amazed by the German populations' "...ability to absorb air attacks...."[272]

Although the achievements of the Speer Ministry were indeed phenomenal, they were for naught. Faced by the overwhelming economic potential of the Allies, Germany did not stand a chance of winning a war of attrition. Dependent upon raw materials from the occupied countries, German production began to ebb when these areas were lost to the Allied advances in late 1944. Nevertheless, it is interesting to note that German

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[271] See Tables 8 and 9 in Appendix for statistics on German armaments production and Allied bombing tonnage.

[272] U.S.S.B.S., 26.

production for the second half of 1944, during the period of the heaviest Allied bombing, was the highest of the war.

Speer's efficiency and organizational ability proved beyond a doubt the value of having technicians in the bureaucracy. Being a technician, he was one of the first members of the Nazi hierarchy to realize the war was lost. At his trial Speer stated that he did not consider the war lost until the late Autumn of 1944. During 1944 he produced material to re-equip 130 infantry divisions and 40 armored divisions, in addition to providing new equipment for two million men.[274] He went on to say that although the Reich achieved her highest output in tanks, jet aircraft, and U-boats during the Fall of 1944, the use of these weapons was severely restricted by the loss of fuel plants to Allied bombing.[275]

In the Fall of 1944 Hitler was determined to fight to the last German. He was equally determined that nothing of value should fall into the hands of the advancing Allies. To insure the Allies found nothing but barren land in their path, the Fuehrer issued orders for a "scorched-earth" policy to be carried out. Implementation of this policy would have completely

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[273] U.S.S.B.S., 26

[274] I.M.T., XVI, 484.

[275] Ibid., 484.

dest yed Germany's industrial base.[276]

Realizing the effect a "scorched-earth" policy would have on Germany's ability to recover after the war, Speer openly fought these measures.[277] Later he was successful in getting Hitler to modify his orders. To accomplish this, Speer played on the Fuehrer's fantasy that Germany would soon rally her strength and push the Allies back. When this happened, the recaptured factories and equipment would be needed for armaments production.[278] By his actions in the last days of the war, Speer contributed greatly to the economic recovery of Germany.

At the Nuremberg Trials Speer was both candid and frank concerning his relationship with Hitler and his role in the Third Reich. When describing his rise to power from the witness stand on the first day of his trial, Speer stated:

> Through this predilection which Hitler had for architecture I had a close personal contact with him. I belonged to a circle which consisted of other artists and his personal staff. If Hitler had had any friends at all, I certainly would have been one of his close friends.[279]

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[276]Karl D. Bracher, The German Dictatorship, (New York: Praeger Publishers, 1970), tr. by Jean Steinberg, 464.

[277]I.M.T., XVI, 286-290.

[278]Speer, 448-451.

[279]I.M.T., XVI, 430.

Later in the trial Speer voluntarily described his guilt as follows:

> I should like to say something of fundamental importance here. This war has brought an inconceivable catastrophe upon the German people, and indeed started a world catastrophe. Therefore it is my unquestionable duty to assume my share of responsibility for this disaster before the German people. This is all the more my obligation, all the more my responsibility, since the head of the Government has avoided responsibility before the German people and before the world. I, as an important member of the leadership of the Reich, therefore, share in the total responsibility, beginning with 1942....Insofar as Hitler gave me orders and I carried them out, I assume the responsibility for them....[280]

Speer made no effort to shift the responsibility of his actions to Hitler or any of the other defendents. He was tried and convicted at Nuremberg for "war crimes and crimes against humanity." This judgment was reached because Speer had knowledge that slave-labor was used in his armaments factories. For his "crimes" Speer was sentenced to twenty years in prison.[281] While convinced that he committed no personal crimes, Speer assumed institutional responsibility for the crimes of the Nazi government. He failed to convince the other Nazi defendents to do the same.

The Speer System of war-production, like the Rathenau System before it, clearly demonstrated the effectiveness of

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[280] I.M.T., XVI, 483.

[281] Eugene Davidson, The Trial of the Germans, (New York: MacMillan Co., 1969), 503-504.

closely coordinating economic planning and military strategy. Additionally, both systems have shown that to achieve maximum effectiveness and efficiency the centralization of economic power is a must, especially in a nation of finite resources. Both Rathenau and Speer realized that modern wars are won on the assemblyline; and that the largest army in the world is impotent, unless it is well supplied with the implements of war.

CHAPTER V

CONCLUSIONS

In assessing the war-making potential of nations, the economic element of national power as it affects military strategy is often misunderstood or ignored. During the late-nineteenth and early-twentieth centuries, the rapid rise of industrialization; advancements in science and technology; and the competition for diminishing natural resources were not sufficiently considered by military strategists. These military planners tied themselves to superannuated tactics, techniques, and doctrines merely because these approaches were successful in the past.

This inability to exercise seriously their powers for innovative thinking, much less exploiting the contributions of scientists and industrialists for real military advantages, was by no means unique to Germany. It was true of the strategists in the other nations of the world also. These men tended to assess military power in terms of manpower that could be mobilized for the front, stockpiles of arms and munitions available to fight, and the speed with which they could field their forces at the perceived point of decision.

Unfortunately for all concerned, economic planning for sustaining the committed military forces was almost completely

neglected. This situation was caused by the overwhelming confidence that the military planners had in the strength of their armed forces, and an over-reliance on a single strategy. By relying on quick victories in short wars, the strategists of the world failed to conduct any in-depth contingency planning which involved all the resources of the nation. Despite the proliferation of increasingly lethal weaponery, the war of attrition was not foreseen at the turn of the twentieth century. Therefore, nineteenth century doctrines were dogmatically adhered to--to the point of being completely inflexible.

Because of an inflexible military strategy, the German experience in World War I provides an excellent example of a nation that initiated what evolved into a world war. The anticipated war was to be one of short duration and economically supported by existing supplies. No serious preparations were made in advance to husband limited natural resources, nor to provide an industrial base to sustain the military forces in the field should the war last longer than expected. One month after the war was declared, the optimism of the Kaiser and his generals was shattered when their basic military strategy was defeated.

The anticipated quick-victory was not realized. The German Army and industry were required to mak fundamental changes in their strategy and production techniques respectively.

They were faced with the vexing problem of static-trench warfare, which evolved into a war of productive capabilities. The assemblyline, as opposed to the frontline, became the point of decision.

When the Kaiser's forces marched into France, German industry was not prepared to support them for any period of time. Walther Rathenau, the industrialist, had foreseen the probability of the conflict being protracted, besides costly in terms of military equipment and supplies. Acting on his own initiative as a civilian, he contacted the War Ministry and warned them of the possible consequences to German industry if a blockade was instituted.[282] The Reich's position in respect to natural resources was particularly vulnerable.

In August 1914, Rathenau's commission to organize and head a War Raw Materials Bureau enabled Germany to survive the initial defeat of her military strategy. Additionally, by having control over the finite resources of the Reich, Rathenau's organization, the K.R.A., was able to exert a significant amount of control over the entire economy. The K.R.A. proved that centralized control of limited resources could add materially to a nation's war-making potential.

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[282]Felix, 641.

In 1917-1918, the rise of Hindenburg and Ludendorff to Supreme Command soon was followed by their realization that they were involved in the first total war in modern history. Unlike past wars, the First World War eventually affected all segments of the nation. Consequently, with the initiation of the Hindenburg Plan in late 1916, Imperial Germany geared herself for the battles of production that were ahead of her.[283] Unfortunately for the Reich, the realization and effort came too late.

By 1917 the United States with its huge industrial base entered the war against Germany. This action doomed the Reich to eventual defeat. The superhuman efforts of the German people and industry only postponed the outcome of the war by two years. If the Imperial strategists had anticipated a war of attrition, and if they would have developed adequate economic contingency plans prior to the initiation of hostilities, the outcome of the war probably might have been different. The conversion of the economy,under fire, while enabling Germany to continue the war for four years,proved to be inadequate to achieve the national objectives.

While Hitler learned many lessons from the First World War, he initially failed to see the significance of centralized

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[283]Groener, 199-201

control over a war economy. In 1939, when the Third Reich initiated her wars of aggression, control over the economy, especially natural resources was so fragmented that it really did not exist.[284] The Fuehrer attempted to achieve some semblance of self-sufficiency in raw material prior to 1939 through the Four Year Plan; however, the Reich never achieved complete independence from outside sources of supply. Hitler's pattern of conquests seemed to reinforce the theory that each territorial acquisition placed Germany in a better economic position to wage the next war. This is especially true considering the natural and human resources, besides industrial facilities, which each victory placed at the Nazi disposal.[285]

Hitler's greatest failing, however, was that he did not make adequate use of the resources or facilities available to him. Rather than having an organization similar to the K.R.A. controlling the economy, the Fuehrer was reluctant to give any one organization, or individual, too much power in economic matters. Furthermore, with the initial successes of the Blitzkrieg, Hitler saw no need to change the existing structure of the economy.[286] German industry, as organized, had met

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[284] Rich, I., 59.

[285] Strenger, 43.

[286] U.S.S.B.S., 6 and 23.

his demands. Intoxicated with success, and confident in the strategy of Blitzkrieg, Hitler made the fatal mistake of invading the Soviet Union in 1941.

The planned "eight-week" Blitzkrieg against Russia ended in defeat six months after it was initiated. The Russian stand before Moscow in December 1941 became the critical turning-point in the Second World War for Europe. The Nazi strategy had been defeated, and much to his regret, Hitler found himself involved in a war of attrition. The Nazis, like the Imperialists before them, were not economically prepared for the battle of production.

Since Hitler was intimately involved in the European War, there is every reason to believe that he should have benefitted from the historical lessons of developing a rigid military strategy. The Dictator should have been aware of the need for contingency planning to supplement, or replace, a strategy which had proven itself inadequate to achieve national objectives. In spite of the lessons of the last war, Hitler chose to place his confidence on the strategies of Bismarck, von Moltke, the Elder, and von Schlieffen. The mentors taught, and believed in planning for intense, short wars of movement, which were designed to achieve quick strategic victories at minimal cost.

Because of an overreliance on a single, rigid strategy,

Hitler, like the Kaiser before him, was forced to change his strategy and convert Germany's industrial base, to support a war of attrition. The German defeat before Moscow in 1941, and the subsequent loss of personnel, equipment and supplies, quickly demonstrated Hitler's lack of economic preparations for total war. The Nazi war-machine's potential was rejuvenated only by the appointment of Albert Speer as Minister of Armaments and Munitions in February 1942.

Speer, an architect by training and a technician at heart, was quick to grasp the incredible confusion that was supposed to be the German economy. With Hitler's power behind him, Speer brought order out of chaos. He methodically set about reorganizing the German economy in support of the war effort. Speer fought to gain control over all aspects of the economy; however, he was only partially successful. The Luftwaffe; Himmler's SS, and Ley's Labor Front eluded his domination almost completely. Goering's Luftwaffe only came under Speer's Ministry in the Summer of 1944;[287] when the war was virtually lost.

On becoming Hitler's organizer for the war effort, Speer adopted Rathenau's System of war production. The Zentrale Planung became the Nazi equivalent of the K.R.A. Industrialists

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[287] I.M.T., XVI, 457.

and technicians were identified and brought into government economic programs. The committee system of war production was instituted. Under his supervision, new committees were established to concentrate on research and development, and permitted to remain independent of the committees of production.

While Speer's achievements of production are now a matter of record,[288] they are insignificant in terms of "what could have been" had Hitler been willing to centralize economic planning prior to the war. By 1935 the Fuehrer had at his disposal information on the capacity of all machinery, factories, labor, resources, transportation, and power in Germany to support a comprehensive program of war production.[289] This information was never used to its full extent because of Hitler's economic program of "butter and bullets."

The evidence indicates that Hitler did not abandon this economic program until 1944, when the change was forced upon him by Allied initiatives. It was only when the Third Reich was in her death throes, that the economy was geared for total war. Again it was too little and too late. Opposed by the United States, Great Britain, and the Soviet Union with their

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[288]See Table 8 in Appendix for statistics on selected items of equipment under the Speer Ministry.

[289]Strenger, 16.

well-developed industrial bases and easy access to natural resources, Hitler's Germany did not stand a chance in the battle for production.

Faced with the delimma of being unable to out produce his opponents, the Fuehrer attempted to achieve qualitative superiority. If he could not produce more guns, then the guns produced would be better. Evidently, Hitler did not recognize that his attempts to maintain a technological advantage were in vain. The industrial nations that opposed him were quite capable of exploiting his technology once they captured a piece of new equipment. The German scientists were unable to develop new technologies faster than the Allies were able to exploit the information gained from captured materials.

It was only after the Nazis gave up on qualitative superiority in the Summer of 1944, that they instituted a program to compete with the Allies in production. This program of quantity was hindered when Hitler decided it was more important to have Germans on the frontline, as opposed to the assemblyline.

By 1918 and 1945 respectively, the situation in Germany had deteriorated drastically. During the First World War Ludendorff had planned the last great offensive that would achieve final victory. In late 1944, Hitler's goal in the Ardennes Offensive was similar. In both instances the last

great offensive failed to accomplish its objective; and promptly served notice to the rational members of the German hierarchy that the war was lost.

Unlike Wilhelm II, who eventually conceded defeat, Hitler refused to listen to his advisers. The Fuehrer was determined to fight to the last German and destroy the Reich's capability to survive when the war was over.[290] His efforts in this area were thwarted in considerable measure by one of his oldest surviving friends, Albert Speer.

When Speer finally recognized that further effort was futile, he transmitted his thoughts to Hitler. The Fuehrer refused to listen, and ordered the implementation of a "scorched-earth" policy in front of the advancing Allies. At great personal risk, Speer intervened and on many instances countermanded Hitler's instructions. He could not bear to see Germany's industrial base destroyed. It was the nation's only chance for rehabilitation after the war.

Of all the elements of power, the national will is paramount. Without the support of the people, a nation's military, or political strategy stands very little chance of being successful. This is especially true in time of war.

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[290] I.M.T., XVI, 488.

The determination demonstrated on the battle and home fronts can often mean the difference between success and failure. A key factor in the formulation of the people's determination is their recent experience.

At the beginning of World War I, the German people were still flushed with the victories achieved during the Wars for German Unification. Also, the Reich's rapid rise as an industrial power clouded their vision and caused the people to misperceive their actual power and potential as a nation. The political events that led up to the European War tended to reinforce the people's conviction that their neighbors were jealous of their rising stature, and that they were conspiring to restrain Germany's growth as a world power. Many believed they were encircled by their enemies. Consequently, the populace perceived the Kaiser's preemptive strike against France as being defensive in nature and supported it fully.

As the war progressed, and they were called upon to make even greater sacrifices, the enthusiasm of the German people began to wane. Political unrest became active in 1917. After the failure of the Ludendorff Offensive in 1918, the will of the German people to resist disintegrated completely. This in turn culminated inthe bloodless revolution of November 1918 which ended the Second Reich. The masses no longer supported their government.'

The importance of maintaining the support of the populace was one of the key lessons Hitler learned from the First World War. This lesson played a very important role in Hitler's decision-making policies. He first became active in propaganda activities on October 16, 1919, while still a member of the Armed Forces. On that date, he undertook propaganda activities for the German Workers' Party.[291]

Prior to his assumption of power in 1933, Hitler very skillfully used propaganda on national issues; especially the Versailles Treaty, to gain the support of the German peoples for the NSDAP. After his rise to power, he almost immediately created a new ministry, Enlightenment and Propaganda, and appointed Joseph Goebbels, an old party cohort, to head it.

Goebbels' keen insight, besides his unmatched ability as a propagandist, when coupled with Hitler's charismatic personality, was primarily responsible for the moulding of German national will during the 1930's and early 1940's. These two men ably demonstrated that they could gain and maintain the support of the masses.

Each of Hitler's political and military victories were exploited to the fullest. When the wars of aggression (expansion), began in 1939, the German people supported them.

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[291] Hitler's Speeches 1922-1939, I, 2.

The Dictat of Versailles was still fresh in their minds. The public support of the Nazis continued through the defeat at Stalingrad. At this point the national will began to waiver. Ironically, it was the Allies that stabilized and reinforced the German national will once again.

At the Casablanca Conference in January 1943, the Allies adopted the policy of "unconditional surrender" towards Germany. It was this policy that caused many of the noncommitted, and waivering, Germans to throw their support behind Hitler. The Germans were all too aware of what had happened to them at Versailles, and they were equally determined not to let it happen again. If the war-effort required more sacrifices from the people, so be it. They perceived the "unconditional surrender" policy as a distinct threat to their national survival.

Needless to say, the Nazis exploited the Allied policy to great advantage. An examination of German production accomplishments in the 1943-44 time frame attest to this rejuvenated national will.

Another contributing factor to the Nazis maintenance of popular support, was Hitler's economic policy of "butter and bullets." While the Allies were required to restrict consumer goods early in the war, Hitler was reluctant to do so. It was not until 1944 that the Fuehrer finally agreed to the advice of his economic advisers, and seriously curtailed

the further output of consumer products along previous levels.

Under the Nazis the German national will remained steadfast with few notable exceptions. Even when some of the national military and political leaders predicted early defeat and urged surrender, the majority of the people remained loyal to Hitler and looked to him for guidance and deliverance. This faith in the "leader" remained until the end of the war.

In examining the German experience in the First and Second World Wars, one critical question keeps emerging. How did a nation with so few natural resources sustain itself in total war for so long a period of time after the defeat of its military strategy? This problem takes on added significance when it is understood that Germany was not economically prepared for the total war which she eventually fought in both instances.

The study of both wars clearly indicates that Germany's "success" in sustaining her war-machine can be attributed to a centralization of the economy. In the First World War the K.R.A. and later the Kriegsamt performed this function. In the Second World War centralized control was never fully established; however, Zentrale Planung did exercise a significant influence over the economy.

Another lesson of both wars is that military strategy must consider the other elements of national power, especially the economic element. Economic planning and preparation must

go hand-in-hand with military strategical-planning. In this sphere military strategy must be flexible and contingency plans prepared in case the basic strategy of the nation fails to achieve its objective.

During both World Wars, German strategy was extremely inflexible. It was based on achieving quick victories in short, methodical wars. The wars were to be fought with existing supplies, and no serious economic preparations were made to support the conflict if its nature changed from a limited war to one of attrition. This was Germany's major failing in both World Wars.

A third important lesson of the two wars lies in the realm of natural resources. Industrialization has clearly made the nation-states of the world interdependent upon each other for raw materials. With the possible exclusion of the Soviet Union, no industrial nation can provide its own needs in raw materials. This "chink in the national armor" is vulnerable to exploitation by a would-be enemy.

In both wars Germany was able to minimize this vulnerability by various means. The first method relied on the stockpiling of resources before the war. Although Germany had stockpiled raw materials, the reserves were based primarily on her limited-war strategy, but not really adequate to support a modern industrial war of production. A second method at

which Germany proved herself to be quite proficient was the introduction of substitute (Ersatz) products. Ersatz products ran the spectrum from coffee and food products, to synthetic fuels and rubber. A third means was the exploitation of raw materials in conquered countries. Germany's industry benefitted greatly from this source of natural resources; however, not to the maximum extent possible. Prior to, and during, both wars, Germany failed to make comprehensive plans and establish an efficient administrative machine for exploiting these newly gained sources of materials. Consequently, German operations in this area resembled large-scale looting by competing economic agencies. The last and most effective means Germany adopted to minimize her vulnerability in natural resources was the establishment of an agency to control the allocation of the nation's limited resources. The K.R.A. and Zentrale Planung performed this function in the First and Second World Wars respectively.

While failing to prepare comprehensive economic plans for war, Germany was "blessed" during both world wars by the emergence of men of unique organizational ability. Rathenau and Speer, both technicians at heart, clearly demonstrated their ability to assess strategically the situation that faced them, and to take measures for minimizing obstacles in their way. One significant technique that each man employed was in

identifying well-qualified industrialists for state work, and then bringing them into the management of Germany's resources and programs of war production. By doing so, both Rathenau and Speer significantly increased production, while at the same time eliminated waste.

One critical area that successfully escaped the control of both of these organizers was labor. The effective use of manpower during a war of attrition presents the strategic planner with many difficult problems. The competition for skilled labor becomes frantic. Men must be made available for military service, and at the same be available to support a program of war production. Both World Wars are replete with examples of industrial bottlenecks and slow-downs in production because of indiscriminate conscription of workers into military service. It is very obvious that extensive forethought by planners concerning the best utilization of labor is essential.

Disputes over labor also occurred within Germany's industries as well. Of the skilled, semi-skilled, and unskilled labor that was available for war production, constant battles were fought over the existing manpower pool. It was very clear from the German experience that a supreme authority was needed in the labor field to set priorities and allocate the available manpower.

Under Hitler, Fritz Sauckel was charged with this during the Second World War. Sauckel's efforts proved to be

counter-productive because he worked independently of (and many times at cross purposes with) Albert Speer. Had Sauckel's Ministry been subordinate to Speer, or at least Zentrale Planung, a more efficient utilization of manpower would have been achieved. From this experience it is easy to conclude that labor must be under the control of the Supreme Economic Authority of the state.

Many of the techniques outlined thus far may be interpreted as being "totalitarian" in nature; however, this is not true. During both wars the Allies (Great Britain, the United States, and France), adopted them after the wars began, and employed them more effectively than the Germans. This may appear to be a dichotomy, but the nature of industrial warfare demanded centralized control measures. The economic systems, as they existed prior to the wars could not support the needs of military forces involved in a war of attrition.

The lessons learned in the two world wars of the twentieth century must not be forgotten. As more and more nations become industrialized, the competition for natural resources is increasing geometrically. This competition for raw materials will inevitably lead to confrontations between industrial nations. The confrontations could lead to war if any

of the nations involved determine their vital interests are involved. Whether the war would be limited in nature, or mutate into a total war is academic. If a nation-state is contemplating war, offensive or defensive, it must plan ahead for the possibility of total war. To do less would reduce the chances for final victory.

APPENDIX A - STATISTICS

List of Tables

Table 1

POPULATION SHIFTS 1871-1910[210]

Year	Total Population	Rural Percentage	Urban Percentage
1871	41,059,000	63.9	36.1
1880	45,234,000	58.6	41.4
1890	49,428,000	57.5	42.5
1900	56,367,000	45.6	54.4
1910	64,926,000	40.0	60.0

Table 2

GERMAN RAILROAD NETWORK, 1835-1916[293]
(in Kilometers)

Year	Track in Operation	Increase during Preceding Decade
1835	6	------
1845	2,300	2,300
1855	8,290	5,990
1865	14,690	6,400
1875	27,960	13,270
1885	37,650	9,690
1895	46,560	8,910
1905	56,980	10,420
1915	62,410	5,430

[292]Clapham, 278.

[293]Stolper, 40-41.

Table 3

IRON AND STEEL OUTPUT 1880-1910[294]
(in Metric Tons)

		1880	1890	1900	1910
Great Britain	Pig*	7,873,000	8,031,000	9,103,000	10,172,000
	Steel	3,730,000	5,301,000	5,891,000	7,613,000
Germany (includes Luxemburg)	Pig	2,729,000	4,658,500	8,521,000	14,794,000
	Steel	1,548,000	3,164,000	7,372,000	13,149,000
France	Pig	1,725,000	1,962,000	2,714,000	4,038,000
	Steel	1,354,000	1,407,000	1,935,000	2,850,000
Belgium	Pig	608,000	788,000	1,019,000	1,852,000
	Steel	596,000	716,000	927,000	1,857,000

* Short for Pig Iron.

[294] Clapham, 281.

Table 4

COAL PRODUCTION-SELECTED STATES 1871-1913[295]
(in Metric Tons)

Year	Great Britain	Germany		France	Belgium
		Coal	Lignite		
1871	118,000,000	29,400,000	8,500,000	13,300,000	13,300,000
1880	149,000,000	47,000,000	12,100,000	19,400,000	16,900,000
1890	184,500,000	70,200,000	19,100,000	26,100,000	20,400,000
1900	228,800,000	109,300,000	40,500,000	33,400,000	23,500,000
1910	268,700,000	152,800,000	69,500,000	38,350,000	23,900,000
1913	292,000,000	191,500,000	87,500,000	40,800,000	22,800,000

[295]Clapham, 281-282.

Table 5

PRODUCTION OF CRUDE POTASSIUM SALTS[296]
(in Metric Tons)

GERMANY	
1861-- 2,000	1891--1,371,000
1871--375,000	1901--3,535,000
1881--906,000	1911--9,607,000

Table 6

THIRTY RAW MATERIALS MOST VITAL IN WAR[297]

1.	Aluminum.....	Airplanes, Incendiary bombs, camp equipment.
2.	Ammonia.....	Nitric acid--most explosive, fertilizer.
3.	Antimony ore.....	Primers for shells, tracer bullets, storage battery grids, type metal.
4.	Asbestos.....	Brake linings, insulation.
5.	Chromium.....	Stainless steels, tanning.
6.	Cotton (cellulose).....	Smokeless powder, photo film, plastics, clothing, cotton duck.
7.	Coal.....	Explosives, neoprene rubber, ammonia, dyes, medicines, heat, and power.
8.	Copper.....	Brass shells, dynamos and motors, power lines.
9.	Fats.....	Glycerine--nitroglycerine and dynamite.

[296] Clapham, 305.

[297] Holmes, 9-11.

Table 6 continued

10.	Food.....	Animal maintenance.
11.	Iron.....	Steel, cast iron.
12.	Lead.....	Bullets, ethyl gas, paints, storage batteries.
13.	Magnesium.....	Airplanes, incendiary bombs.
14.	Maganese.....	Alloy steels (deoxidizing and desulfurizing).
15.	Mercury.....	Mercury fulminate primers, scientific work, anti-fouling ship paint.
16.	Molybdenum.....	Alloy steels (especially high-speed tools).
17.	Nickel.....	Stainless steel, metal plating.
18.	Petroleum.....	Gasoline, lubricants, synthetic rubber, glycerine, fuel oil, diesel oil, mustard gas.
19.	Phosphates.....	Fertilizer.
20.	Potash.....	Fertilizer.
21.	Rubber.....	Tires, gas masks, gaskets, hose, clothing.
22.	Salt.....	Chlorine--neoprene rubber, chlorinated rubber, war gases, degreases, anti-freeze, bleaching, water purification, sodium hydroxide and soda.
23.	Starch.....	Dextrose sugar--alcohol--smokeless powder, Nitrostarch, food, adhesives.
24.	Sulfur.....	Surfuric acid to aid nitration of cotton, toluene, etc; sulfur dioxide for bleaching; mustard gas; fundamental chemical.
25.	Wood.....	Cellulose--smokeless powder, photo film, paper, construction, laminated plywood (airplanes, etc.).

Table 6 continued

26. Wool.....Clothing.

27. Tin.....Tin cans, metal bearings, bronzes.

28. Tungsten.....Alloy steel (especially high-speed cutting tools).

29. Vanadium.....Alloy steels.

30. Zinc.....Brass cartrides, die castings, galvanized steel.

(air and water are taken as a matter of course).

Table 7

SELECTED RESOURCES AVAILABLE TO GERMANY FROM OCCUPIED AND ALLIED COUNTRIES, 1938-41[298]
(figures at time of association)

Year	Country	Coal +	Iron&Steel	Oil
1938	Austria	2,500,000MT	389MT	-----
1938	Czechoslovakia	15,814,717MT	----------	109,000Bls
1939	Poland	38,114,000MT	810,000GT	3,319,000Bls
1940	Denmark	----------	----------	----------
1940	Norway -- Strategic metals			
1940	Holland	13,058,000MT	200,000GT	----------
1940	Belgium	29,847,000MT	4,420,000MT	----------
1940	Luxemburg	----------	2,350,000GT	----------
1940	France	51,000,000MT	10,000,000MT	479,000Bls
1940	Hungary*	10,625,000MT	350,000GT	693,000Bls
1940	Romania*	----------	----------	35,988,000Bls
1941	Bulgaria* -- Strategic metals			
1941	Yugoslavia -- Strategic metals			
1941	Greece -- Strategic metals			

*=German Ally

MT=metric ton=2,204.62 pounds

GT=gross ton=2,240 pounds

Bls=U.S. Barrels=42 U.S. gallons

+=Includes Lignite

[298]Strenger, 37-64.

Table 8

Indices of the production of army and aircraft weapons and ammunition, quarterly, fourth quarter 1939--first quarter 1945.[299]

Year/Qtr	Army Weapons	Army Munitions	Aircraft Weapons	Aircraft Munitions	Bombs
1939/4th		186			41
1940/1st	86	195			40
/2nd	101	268			146
/3rd	97	299			179
/4th	101	185			124
1941/1st	127	178	75	72	122
/2nd	144	142	91	78	117
/3rd	132	94	101	100	106
/4th	90	86	117	89	100
1942/1st	109	117	114	100	103
2nd	148	267	167	109	120
3rd	156	319	135	160	148
4th	179	534	221	142	150
1943/1st	195	632	284	176	93
2nd	254	646	307	152	106
3rd	287	639	364	105	112
4th	337	722	426	148	126
1944/1st	348	825	376	153	124
2nd	402	838	583	162	102
3rd	439	914	722	162	93
4th	470	849	676	150	38
1945/1st	276	465	279	149	12

(Monthly Averages, January-February 1942=100)

[299] U.S.S.B.S., 286.

Table 9

Tonnage of bombs dropped on Axis Europe by strategic air forces by type of target, quarterly, 1940-April 1945.[300]

Year/Qtr	Area Raids	Industry	Transportation	Miscellaneous	Total
1940/1st	---	---	---	31	31
2nd	390	---	717	1,344	2,451
3rd	360	218	767	4,638	5,983
4th	703	326	603	3,450	5,082
1941/1st	1,385	320	368	2,611	4,684
2nd	3,989	928	3,061	3,303	11,281
3rd	5,502	362	3,538	4,149	13,551
4th	3,599	199	885	2,987	7,590
1942/1st	3,782	44	21	2,906	6,753
2nd	11,502	13	149	3,330	14,994
3rd	15,715	357	126	1,474	17,672
4th	8,045	780	477	1,735	11,037
1943/1st	16,578	682	1,322	12,195	30,777
2nd	39,951	3,864	1,423	5,884	51,122
3rd	43,211	3,546	2,112	17,290	66,159
4th	31,928	4,401	6,766	15,035	58,130
1944/1st	44,966	9,723	34,023	25,648	114,360
2nd	58,785	33,224	146,108	95,439	333,556
3rd	114,602	72,567	108,348	108,291	403,808
4th	106,612	69,630	125,729	47,839	349,810
1945/1st	76,967	75,949	166,265	50,506	369,687
April	19,461	10,981	52,274	28,746	111,462

(in Short Tons=2000 pounds)

[300] U.S.S.B.S., 2-5.

APPENDIX B

SAMPLE QUESTIONNAIRES USED BY THE GERMAN ECONOMIC GENERAL STAFF

Table of Contents

Lead Questionnaire[301]

Business or Firm Name: _____

Established: _____

Business Address: _____

(City) (Province) (Street) (No.)

Main Railroad Station: _____

Where located: _____

Distance to next Railroad Station: _____

Do you have tracks connection with the railroad? ___ ____

What is distance to next Harbor: _____

Are there maritime connections, water-ways

or channels: _____

Where are your dealers located: _____

Where are your clients located: _____

These questions were the basic ones used on all Questionnaires for Machinery, Raw Materials, Sources of Power Production and Maintenance and Labor. Therefore, they will not be repeated on the following questionnaires.

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[301] Strenger, 11.

Machinery Questionnaire[302]

Questions A - Q inclusive were the most important questions of this questionnaire and were arranged as follows:

a.) Amount of Machines:

b.) Type of Machines:

c.) Factory Numbers of Machines:

d.) Manufacturers of Machines:

e.) Age of Machines:

f.) Condition of Machines:

g.) Are the machines operated by transmission:
Are the machines equipped with own motors:
If so, how many h. p.

h.) What are you manufacturing with your machines at present:

i.) Are your machines fit for conversion:

k.) If they are, what could you manufacture when converted:

l.) Have you placed orders for machines:
If you have, what type did you order:
State names and addresses of your dealers:

m.) Do you manufacture machines in your factory for your own use:

n.) Do you have supplies in stock:
What kind of supplies:

o.) Have you placed orders for supplies:
If so, from whom did you order them:

p.) For what purpose do you need these supplies:

q.) Have you any unfilled orders for machines:
If you have, state names and addresses of your customers and specify the machines ordered:

---

[302] Stronger, 12.

Use supplementary sheets to answer the above questions:
Specify list of machines on separate sheets.

Raw Materials Questionnaire[303]

Questions A - N inclusive were the most important questions of this questionnaire and were arranged as follows:

a.) Do you mine, manufacture or distribute:
If so, specify Raw Materials:

b.) What Raw Materials do you have in stock:

c.) Type of Raw Materials:

d.) Weight of Raw Materials:

e.) What kind of Raw Material do you mine:
State quantities per day; per month:

f.) What do you manufacture:
What quantities per day; per month:

g.) What do you distribute:
What quantities per day; per month:

h.) Have you placed orders for Raw Material:

i.) State names and addresses of your dealers:

k.) For what purposes are these Raw Materials designated:

l.) What unfilled orders for Raw Material do you have:
State names and addresses of your customers:

m.) For what purposes are these Raw Materials designated:

n.) What was the average mining or production during the past five years:
State average for period of one year:

A separate sheet has to be used for each kind of Raw Material.

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[303]Strenger, 13.

Sources of Power Production and Maintenance

Questionnaire[304]

Questions A - F inclusive were the most important questions of this questionnaire and were arranged as follows:

Re: Sources of Power Production:

a.) Motor c.) Diesel Motor e.) Gas Motor

b.) Steam Engine d.) Turbine f.) Transmission

State Quantities of Power and indicate Sources of Power Production.

Re: Sources of Maintenance:

a.) Long Distance Power Station d.) Oils

b.) Water Power e.) Gas

c.) Coal; hard or soft f.) Electricity

Where are the Sources of Maintenance of your Power Production located:

What conversion of your present Power Maintenance to another type is possible:

What supply was your necessary requirement for the past five years:

State your average requirements for one year period.

---

[304] Strenger, 14.

Labor Questionnaire[305]

Questions:	Answers:
a.) How many laborers are working at present:	_____
How many hours does a crew work at present:	_____
How many shifts does a crew work at present:	_____
How many hours does each shift work:	_____
b.) Number of skilled workers:	_____
Number of unskilled workers:	_____
c.) What was the average number of workers employed during the past five years:	_____
Number of Men: Average Age:	_____
Number of Women: Average Age:	_____
Number of Juveniles: Average Age:	_____
d.) How many laborers do you need for one shift, if all available machines in your plant are operating:	_____

Where do your laborers live:

e.) How many laborers live within one mile:	_____
How many laborers live within two miles:	_____
How many laborers live over three miles away:	_____

[305] Strenger, 15.

f.) What transportation facilities do your laborers use in traveling from their homes to the plant: _____

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