

achieving the objectives aimed at will be appraised in the following sections.

THE GERMAN WAR ECONOMY

The outstanding feature of the German war effort is the surprisingly low output of armaments in the first three years of the war—surprisingly low as measured not only by Germany's later achievement but also by the general expectations of the time and by the level of production of her enemy, Britain. In aircraft, trucks, tanks, self-propelled guns, and several other types of armaments, British production was greater than Germany's in 1940, 1941, and 1942.

For these early years, the conclusion is inescapable that Germany's war production was not limited by her war potential, by the resources at her disposal but by demand; in other words, by the notions of the German war leaders as to what was required for achieving their aim. The Germans did not plan for a long war, nor were they prepared for it. Hitler's strategy contemplated a series of separate thrusts and quick victories over enemies that were even less prepared than Germany; he did not expect to fight a prolonged war against a combination of major world powers. The Polish campaign, while it brought an unexpected declaration of war from France and England, went according to plan. The Norwegian and later the French campaign further justified the German faith in "Blitzkrieg." Both ended in complete victory within a very short time and with an unexpectedly small expenditure of military resources. After the occupation of France, England, though not invaded or brought to heel through aerial bombardment, was no longer considered an immediate threat. Eventual intervention by the United States was not taken seriously. The attack on Russia was started in the confident expectation that the experience of the earlier campaigns was to be repeated; Russia was to be completely subjugated in three to four months.

The underestimation of Russia's strength was the major miscalculation in this strategy. The Polish and French campaigns had shown that Germany's military preparedness, large or small, was fully adequate for achieving her strategic objectives. But in the case of Russia the same strategy would have required preparations on a far greater scale; and in the critical nine months that separated the decision to invade Russia from the actual beginning of the campaign, such preparations were not made, even though there were no serious obstacles

to an all-round expansion of armaments production. The first three months of the Russian campaign did, in fact, go entirely "according to plan"; and at the end of September Hitler, believing the war about won, ordered a large scale reduction in armaments production. This order, even though only partially carried out, caused important reductions in stocks, particularly of ammunition, the effects of which were not overcome for a considerable time.

The defeat before Moscow, and the entry of the United States into the war in December 1941, brought the German leaders for the first time face to face with the prospect of a prolonged war with the three greatest powers ranged against them. From that time onward limitations of demand no longer played a role in restricting armaments production; Germany's leaders called for an all-out effort. Yet, measured by the standards of other belligerents, there was no "total mobilization" and no long-term planning to bring the war effort to its attainable maximum. The production of civilian goods was restricted only to a moderate extent; there was no further mobilization of women and no large scale transfer of labor from nonessential to essential industries.

THE SPEER PERIOD

In February 1942, Albert Speer, Hitler's personal architect, was appointed Minister of Armament Production with wide powers; and the production history of the following two and a half years bears the stamp of the "Speer Period." Speer set about replacing the existing machinery of control with a new organization (the "Rings" and "Committees"), manned by people selected from among the production managers and technicians of industry. They were charged with the task of increasing production by rationalizing German war industry; that is, by simplifying designs, standardizing components, concentrating production in the most suitable plants, reducing the number of different armaments orders given to a single firm, exchanging patents and secret processes, and generally adopting, throughout industry, the most efficient processes of production. The result of this policy was a more than threefold increase in Germany's munition production.

The index of finished armaments production prepared by the Planungsamt (Planning Office) of the Speer Ministry discloses three distinct levels of armament production separated from each other by three distinct periods of expansion, each of which raised

production by about half of the preexisting level. The first level was the rate of production of the years 1940-41, which lasted until February 1942. (Although comprehensive monthly figures are not available for the years 1940-41, available data indicate that the movements over this period were comparatively small, a gradually rising trend up to August 1941 being followed by a decline until the end of the year.)

The first spurt, beginning at the time of Speer's appointment to office, raised the general level by about 55 percent by July. This increase, in which all armament categories participated, must have been largely the result of earlier plans or simply of the changed attitude toward the war, rather than of any positive measures taken by the Speer Ministry. It came to a temporary halt owing to the redesigning of tanks and to bottlenecks in the parts and components making industries, which were not prepared for this sudden expansion. The removal of these bottlenecks was largely a matter of improved organization; and in October the expansion was resumed with a second spurt, which, led by an almost threefold increase in tank production, raised the general level of output by 50 percent, bringing the index to 232 by May 1943. During the second half of 1943, the expansion suffered a new interruption owing to a variety of causes, among which the change-over to new types in submarines, the air raids on the aircraft industry, and the ensuing dispersal measures, were the most important. The last spurt, confined to aircraft, weapons and tanks, began in December and raised production by another 45 percent by July 1944, when the general index reached its peak at 322. In the following month the decline set in, turning into complete collapse by the spring of 1945.

Within two and a half years Germany's military output in aircraft, weapons and ammunition was raised more than threefold, in tanks nearly six-fold, an achievement for which Speer and his associates take most of the credit. One may ask, however, whether this expansion represents the full utilization of the potentialities of the German economy.

There can be no doubt that Germany started the conversion of her economy to a wartime footing far too late. Had Germany's leaders decided to make an all-out war effort in 1939 instead of 1942, they would have had time to arm in "depth"; that is, to lay the foundations of a war economy by expanding their basic industries and building up equipment for the mass production of munitions.