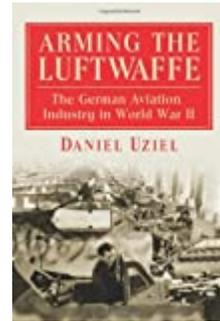




**Daniel Uziel.** *Arming the Luftwaffe: The German Aviation Industry in World War II.* Jefferson: McFarland, 2012. vii + 303 pp. \$45.00 (paper), ISBN 978-0-7864-6521-7.



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In mid-1944, the Third Reich reached its peak industrial production rates. That this achievement came in the face of intensified Allied bombing and with a collapsing war machine has caused many to admire this feat, but there has been relatively little scholarly analysis of the episode. Daniel Uziel, in his *Arming the Luftwaffe*, addresses this gap and critically analyzes why German production peaked in mid-1944. He examines the Third Reich's aviation industry through the surviving records of German companies and armaments ministries, the U.S. Strategic Bombing Survey and other reports, and accounts of concentration camp survivors who worked in these factories. Uziel convincingly argues that this peak was the result of increasing reliance on slave labor and the rationalization of production that began under the Reich's Air Ministry in 1942, and was accelerated by Albert Speer and the SS in 1944. The rise in production rates was impressive, but Uziel notes that this achievement was hollow: there were not enough trained pilots or fuel to use these planes, and they were often defective. *Arming the Luftwaffe* is a valuable contribution to work on the Third Reich's aviation industry, but more important, it explains and contextualizes the rise in German production rates near the end of the war.

Uziel begins with a history of air production from

1933 to 1941. He describes its rapid expansion in the 1930s under the Nazis, and aircraft firms' self-perception as model, high-tech industries that were microcosms of the national *â*volksgemeinschaft.â By 1939, the industry had equipped Germany with a strong tactical air force, but there were some problems. Manufacturers did not have enough skilled workers, and they aggravated this deficiency by resisting mass production techniques. Also, there were simply too many variants and models in production, and by 1941, the industry could not supply the Luftwaffe with enough planes to meet its commitments.

In response, the new chief of the Reich's Air Ministry, Erhard Milch, overhauled aviation production in early 1942. Milch forced modern mass production techniques on much of the industry, and streamlined the types of planes being manufactured. Also, some firms, such as Heinkel, began using slave labor from concentration camps to overcome the shortage of skilled workers. This proved to be effective and cheap, and other companies started using inmates to replace workers who had been sent to the front. The groundwork was laid for the rise in production in 1944, but the industry was still underperforming.

The Alliesâ concentrated attacks on aircraft factories in February 1944, âBig Week,â frightened the Nazi leadership and spurred major change. The attacks did little lasting damage, but intensified the process of putting industry in bombproof installations, forests, or old mines. Speerâs Armaments Ministry finally gained control of aviation production, and the SS exercised an ever larger control over manufacturing. Speer and the SS further rationalized and streamlined production, and used millions of slave laborers. Production increased, but quality suffered, and the Luftwaffe could not translate the numbers into success. The Germans also pinned some hopes on advanced technologies, such as the Me-262 jet fighter, and although many of these had promise and pioneered the weapons of the 1950s, they were still in their infancy and required much more development.

Two of the major themes in this work are the progressive demodernization of aircraft manufacturing, and the Third Reichâs rational, but hopelessly unrealistic plans. Uziel effectively contrasts the prewar, high-tech industry composed of happy, skilled craftsmen and engineers against the reliance on slave laborers in dank caves or huts in forests by the end of the war. He also analyzes the failed leadership of Germanyâs aviation industry, especially by 1944. This is exemplified by the He162 Volk-sjager, which was supposed to be a fast jet fighter that could be mass produced out of wood by slave labor. It first flew in late 1944, but teething troubles and the break-

down of Germanyâs economy limited production to 124 aircraft. Uziel notes that the project made economic and industrial sense. The use of wood and slave labor was a good way to overcome material and labor shortages, but the project made no military sense because the plane was hard to fly and the Luftwaffe had few trained pilots left.

Uzielâs analysis of the source material is comprehensive and effective, but there are some structural weaknesses. He frequently reviews the same chronology in overly long chapters as he describes various bureaucracies, aircraft, and projects. Part of this problem is dictated by his material: discussing multiple organizational changes and the development of individual weapons systems can be episodic and difficult to weave into a single narrative. Regardless, the structure weakens the exposition of the argument.

In sum, *Arming the Luftwaffe* is a very good examination of the German aircraft industry during World War Two. The photographs throughout the book are valuable and instructive, especially in the analysis of German attempts to put industry underground or in protected facilities. This book puts the remarkable German production rates of 1944 into context with a tottering Nazi empire and a broken Luftwaffe, and the delusional leadership of the Third Reich. Uziel effectively examines the problems of procurement and mass production in World War Two, and clearly shows that quantity is not important in of itself: it must be translated into combat effectiveness.

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