

An Unhappy Marriage: The Junkers-Fokker Merger

Richard Byers

THE STORY OF THE RELATIONSHIP between two of Germany's most famous aircraft producers, Hugo Junkers and Anthony Fokker, is a little known part of the larger story of the relationship between the German state and the aviation industry during the First World War. In 1916, surrounded by the chaos and unbridled autocracy of the Hindenburg Program, army aviation officials, themselves under enormous pressure, initiated a forced merger between the two men in an effort to maximize production of a sturdy ground-attack aircraft. This "marriage from above" brought together two ambitious and wilful personalities who soon abandoned any pretence of collaboration and instead sought to use each other to further their own personal and corporate aims. The merger experiment was a complete failure. First, no significant aircraft production occurred that might have altered the war situation. After the war, army officials, many of whom would go on to serve in the secret branches of the *Reichswehr's* embryonic air arm, concluded that such ventures required far greater official oversight, if not outright nationalization, if they were to succeed. Second, Fokker's unauthorized use of Junkers' innovations and technology in his later designs would permanently sour relations between the two men. Third, for Hugo Junkers, his refusal to compromise design techniques for contingent needs encouraged perceptions of him in

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army circles as an irascible inventor who lacked both business acumen and proper deference to his benefactors. For all, therefore, the Fokker-Junkers union produced few positive results and many lasting grievances. To understand why these developments occurred, this paper charts the origins, course, and outcome of the relationship between Anthony Fokker, Hugo Junkers, and the German army.

Hugo Junkers and Anthony Fokker were men of different eras. Born in 1859 in the Rhineland, Hugo Junkers entered aviation from an engineering and academic background. From his base at Dessau, just outside Berlin, Junkers and the talented research team at his firm, Junkers & Company, produced a series of patents and breakthroughs in water systems and gas engines that allowed him financial freedom to pursue research in emerging technologies; by 1909, these interests included aviation. While a professor at the University of Aachen, Junkers collaborated with a colleague, Hans Reissner, on the construction of a metal-composite aircraft known as the *Ente*, or “Duck.” Although the two parted ways after 1911, Professor Junkers continued research on all-metal aircraft. Succeeding experiments resulted in a working prototype, the J-1, by 1915.¹ Largely ignored by the army before the war, after 1915, Junkers’ aviation experiments attracted the attention of the army’s *Inspektorat der Fleigertruppen* (Inspectorate of Flying Troops), or Idflieg. Army officers who were engaged in supervising Junkers & Company’s production of field kitchens and helmets made their Idflieg counterparts aware of the J-1’s existence. Fiercely independent, Junkers resisted external interference in his activities; several times in his career, he terminated professional relationships because of what he considered excessive outside oversight or intrusion.² Contemporaries described him as pugnacious; devoted to research, his firm, and his family; and vehemently resistant to outside interference or criticism. These personality traits, which persisted throughout the rest of his life, shaped Hugo Junkers’ view on business, and life, as a struggle. And since Junkers was surrounded by war, competition, and rivalry, this viewpoint hardened.

Like Junkers, Anthony Fokker had always been interested in new technology. Born in 1890 in the Dutch East Indies, Fokker lacked Hugo Junkers' academic experience; he had avoided education whenever possible, performed poorly at school, and never attended university. However, Fokker possessed tremendous practical talent, and had spent much of his youth constructing an array of gadgets and machines. In 1910, while living at home with his parents after a short and deliberately unsuccessful stint in the Dutch army, Fokker announced to his increasingly despairing father that he wished to travel to neighbouring Germany to learn to fly. Glad that his son had finally made an independent decision, Hermann Fokker agreed to finance the venture. Without his father's support, Anthony Fokker's dreams of flight would never have taken off. Now based permanently in Germany, over the next four years, Fokker steadily pursued his dreams: the construction of a series of advanced aircraft designs and the acquisition of army contracts that would generate the financial stability his father's money had initially provided.³ Unlike Junkers, Fokker preferred "hands on" construction and development methods. Reflecting his background as a largely self-taught designer, Fokker engaged in practical experiments first, and then, if necessary, followed them up with theoretical and mathematical confirmation. This was a common method in contemporary aviation design, but one that conflicted with the incremental approach of designers such as Junkers. Additionally, Fokker recognized his limitations as an engineer, and constantly sought ways of incorporating other designers' advances into his own aircraft. Often, these enhancements occurred as a result of extra-legal means and industrial espionage, and involved overstepping the boundaries of patent law, which Fokker had long ignored.⁴ Fokker's activities became acceptable during wartime to German army authorities, who, in August 1914, had relaxed patent laws in an effort to boost aircraft production and development. But they were regarded as criminal by rivals such as Junkers, whose financial stability in part rested on license agreements stemming from patents. This difference

of outlook would be influential in shaping the course of the relationship between the two men.

In 1910, the German state began to shake itself out of its self-imposed apathy toward heavier-than-air craft. At the same time, the war ministry's research unit, responsible for aircraft testing, began to outline the role of the military in aviation design and development. Captain Wolfram de le Roi, the Unit's leading aviation authority, published a memorandum on 15 March 1910; in it de le Roi recommended that the army take an active role in ensuring that aircraft and aero-engine designs correspond to military needs through the creation of a specific military oversight organization.⁵ He noted the example of the automobile industry, whose designs only became militarily useful after such a move. As John Morrow has observed, "this is the first evidence of the realization that military demands on airplanes would differ so significantly from civilian needs that the army would have to shape the industry's development according to its own ends."⁶ This argument underpinned military aviation policy in Germany between 1910 and 1945.

The German army's faith in its aircraft program shattered in the first three months of the war. Although the creation of the National Aviation Fund in 1912, and increased army orders, had raised enough capital to shelter the nascent domestic aviation industry through the tough economic times between 1911 and 1913, belief that the war would only last weeks meant that aircraft reserves did not exist to serve German needs in the event of a longer conflict. As battle lines congealed across France by the end of 1914, it now became clear that aircraft had become vital reconnaissance tools. At the end of July 1914, the Prussian Army possessed only forty serviceable airplanes; frantic orders from Idflieg for 202 more brought the German total up to about 250, mostly of the obsolete "Taube" type, by the outbreak of war.⁷ Although these planes possessed little military value by the time they were delivered, they did represent the first large-scale production run ever attempted by the industry. Within those numbers were thirty-two monoplane

designs produced by Fokker, his first military order of any significance.⁸

For Fokker, the war came as a form of deliverance. After emigrating to Germany in 1912 to earn his pilot's license, an experience requiring an equal measure of money and courage, Fokker relocated in 1913 to Germany's first airfield, Johannisthal, outside Berlin, to establish an aircraft construction and design business. Having little education in either engineering or design, Fokker followed the standard practice of other contemporary aviators—he shamelessly copied existing designs. His considerable skills as a pilot and flatterer made up for his drawbacks as an engineer, and he recognized early the advantages conveyed by the flamboyant, reckless approach to aviation that was characteristic of the era. Soon, his extreme flying exhibitions attracted more than just public interest; German army officials began to take an interest in the young Dutchman and his aircraft. Despite his best efforts, however, this interest failed to translate into contracts. Meanwhile, Fokker's aircraft construction business lurched from crisis to crisis: a series of bad decisions and poor partnership choices, both professional and personal, had left him destitute and without financial support, as his father, who had now invested tens of thousands of marks in his son's aerial dreams, refused to advance any further sums.⁹ Only the army's belated recognition of the need to strengthen aviation as war drew closer in 1913 saved him from bankruptcy. Acting on advice from the German general staff, Fokker moved his operations to Schwerin, in Mecklenburg, 130 miles north of Berlin.¹⁰ It is no exaggeration to suggest that the outbreak of war saved Anthony Fokker from both financial ruin and historical obscurity.

When war began, and air units mobilized, it soon became apparent that no logistical apparatus existed to monitor performance in the field, or to relay technical data back to the aircraft manufacturers. Nor did any effective supply apparatus exist.¹¹ Adding to these problems, conscription drained aircraft firms of desperately needed skilled workers. Army officials only reluctantly granted exemptions to aircraft employees, and many firms

experienced labour shortages. On the first of August 1914, Idflieg decreed that all firms should begin maximum production immediately, a move that led to hoarding of raw materials, production bottlenecks, and price increases.¹² Against this background, forty percent of the army's operational air strength was destroyed in the first month of the war. Air units demanding two replacement planes per day often only received one per week.¹³

Despite these difficulties, the military continued to maintain a tough stance in its dealings with aircraft manufacturers, refusing in a meeting with the largest firms on 4 August to grant long-term contracts or to raise aircraft prices. Justifying this stance, army officials argued that they did not possess enough information to determine the length of the war, let alone the numbers of additional aircraft needed. Military authorities, cautious, given the record of other armaments manufacturers such as the Krupp firm, also sought to preclude what they perceived as "unjustified enrichment" due to favourable market circumstances.¹⁴ At a meeting three days later that included several important Reichstag deputies, army and industry representatives reached an agreement: in exchange for contracts, labour exemptions, and the use of company flying schools, the firms accepted the army's control of aircraft prices, and also agreed to relinquish lesser patent rights. In exchange for orders, therefore, the industry accepted military control of aircraft design and development, thus perpetuating the status quo of the relationship that had existed between the two sides since the industry's birth.¹⁵

The changed situation, and new demands for military aircraft that appeared in response to trench warfare, provided crucial opportunities for Hugo Junkers and Anthony Fokker. For Fokker, who lacked any income other than that derived from aviation, the new atmosphere that gave priority to a steady aircraft supply came at the right time. Having demonstrated his ability to produce aircraft in 1914, Fokker's name and reputation rose, and by early 1915, he received enough contracts to buy out his creditors and establish a new firm, the wholly-owned Fokker Flugzeugwerke GmbH (Fokker Aircraft Works). At the same time, in the interests of German

national security, Fokker was also naturalized as a German citizen.¹⁶ With the self-assuredness of a man who had found his niche, Fokker aggressively pursued relationships with Germany's leading military aviators, and competed with the three largest producers, Rumpler, Albatros, and LVG, for greater market share. Fokker's trademark monoplanes were greatly feared on the Western Front during the year, and his name soon acquired an infamous reputation in France and Britain.¹⁷ Although 1915 saw Fokker aircraft immortalized by the exploits of German aces, and also witnessed the expansion of Anthony Fokker's personal holdings to include several different enterprises across Germany and Austria, in 1916, design flaws related to poor quality control meant a return to capital shortages and economic uncertainty. By early 1917, Fokker's fortunes had declined to the point that he was ordered to manufacture four hundred planes of a rival company's design, and the German government sought to sell Fokker aircraft to the Dutch rather than send them to the front.¹⁸ In this environment, an unexpected invitation from Idflieg testing chief Captain Felix Wagenführ seemed to promise new hope—a chance to recoup government favour, and, ideally, financial support.

Meanwhile, Hugo Junkers' efforts to complete the firm's first aircraft continued steadily. After wing design experiments ended, work began on the fuselage and tail section of the aircraft in September 1915.¹⁹ Being the first of its type constructed entirely of metal, the J-1 presented many challenges. The initial metal selected for the aircraft, sheet iron, was difficult and unwieldy. Junkers wanted duraluminium, a lighter and more malleable alloy, but since the Zeppelin program received top priority in metal procurement, no sources existed.²⁰ Few workshop drawings of the design were available, and the necessary welding techniques had to be developed during construction. Sixteen workers constructed the J-1 in six weeks, after which the craft, now nicknamed the "Blechesele" (Tin Donkey), underwent stress evaluations. After passing these tests in December 1915, the now flight-ready J-1 arrived at the army's testing facility at Döberitz airfield.²¹

The J-1's radical nature astounded the army's test pilots. Later, Lieutenant Mallinkrodt, who first flew the aircraft over a distance of several hundred yards on December 12, recalled that none of his comrades wished to be the first to fly the plane, all believing it would crash.²² Mallinkrodt's successful flight, in front of Idflieg personnel, Professor Junkers, and his engineers, proved otherwise. After several more flights, the army reached its verdict: the design was a success, but the excessive weight of the aircraft, over 1,010 kilograms, meant that the J-1's speed and climbing ability did not match that of its wooden contemporaries. On 11 January 1916, Professor Junkers wrote to Captain Wagenführ requesting financial assistance for further development, noting that Junkers continued to bear "constantly greater emerging costs."²³ Wagenführ's 15 February reply confirmed that the war ministry had approved an order for six further aircraft at a cost of twenty-five thousand marks apiece.²⁴ The order vindicated Junkers' belief in his design, and he immediately began work on the new model, the J-2.

Despite the war ministry's order for six further machines, the two sides already held different perceptions of the aircraft's potential. For Junkers, the J-1 was an intermediate step towards a final "system" of aircraft manufacture, whereas the military viewed the J-1 as an end product in itself.²⁵ This difference in view widened throughout 1916, as production delays, caused by material and labour shortages, delayed the completion of the six J-2s.²⁶ In the course of this expanded construction, Junkers now also found himself in financial difficulty; aircraft development costs greatly increased, while revenue from other sources, such as license payments, stopped due to the war. A partial advance of forty-eight thousand marks for the six J-2s in March of 1916 failed to alleviate the problem.²⁷ Concerned, Junkers decided to bypass Idflieg and appeal directly to the war ministry. Between August and October, Junkers pleaded his case in a series of long letters, outlining the merits and obvious military potential of his designs, along with the difficulties he faced producing them. Junkers noted that his aircraft were nearly invulnerable due to their metallic construction, were impervious to

fire, and required no hangars in bad weather. He also noted that the character of the metal construction allowed for cheap and relatively unskilled mass-production.²⁸ Receiving no reply, he wrote again on 6 October asking for a one-third advance of two hundred and fifty thousand marks against Ministry orders placed for field kitchens in July and August.²⁹ On 24 October, Colonel Paul Oschmann replied, noting: that “the military authorities have a great interest in the further development of your aircraft types....[However] currently none of your aircraft are ready for the front.... The firm will continue to receive support to the greatest possible extent.”³⁰ Junkers tried again on 19 December, again asking for a one-third advance based on army orders for Junkers & Company products.³¹ These appeals failed to elicit results. The war ministry stuck to its stance of 24 October: as soon as Junkers aircraft were ready for the front, then the Ministry would provide orders. This response infuriated and embittered Junkers, who no longer possessed the financial means to reach this goal. Faced with this circumstance, he began to search for a partner with the necessary capital to fund his aircraft research.

Junkers’ difficulties coincided with those of the German armed forces generally, and those of the German air forces in particular. In an effort to win the war, in October 1916, the German High Command invoked the Hindenburg Program, whose goal was full mobilization of Germany’s resources, a belated recognition of the conflict as “total.” For the aircraft industry, this meant an increase in production to one thousand planes a month. However, for German air forces, quantity and quality improvements were desperately needed. Shortages of quality aero engines—a recurring problem—seriously retarded aircraft capability. The result was that, by the end of 1916, Allied aircraft once again clearly outperformed their German rivals. At the front, one type sorely needed was an armoured infantry support model that could fly low over the trenches and engage enemy ground forces at close range. By this time, many Idflieg officials had concluded that Junkers was only capable of producing heavy, slow aircraft. On 18 November 1916, Idflieg called for designs from three firms: Junkers, Albatros, and AEG.³²

Although the Junkers design won the competition, differences surfaced between Professor Junkers and Idflieg officials; Junkers submitted a monoplane design, but Idflieg wanted a biplane configuration. After much wrangling, a compromise design appeared with a large upper wing and small lower wing. This new aircraft, designated the J-4, featured a five millimetre armoured cockpit. After the J-4 underwent tests at Döberitz Testing Ground in January 1917, Junkers received an order for fifty of the new planes on 20 March 1917. After two and a half years of struggle, Junkers finally achieved his goal—a large aircraft order.

Despite approving the new order, Idflieg remained pessimistic about Junkers' financial situation and the firm's ability to produce large numbers of aircraft in a short time. Major Wagenführ sought to address this situation by bringing Junkers together with a larger producer who possessed facilities capable of quantity production. One such producer was Anthony Fokker, whose underutilized Fokker aircraft works at Schwerin met those requirements. Believing that collaboration could yield results, Wagenführ called for a meeting between the two men.

On 16 December 1916, Hugo Junkers and Anthony Fokker, along with their company representatives, met in Berlin. Hugo Junkers was fifty-seven years old, Anthony Fokker twenty-six. During this first meeting, both men described their methods, resources, and current relations with the army authorities.³³ Fokker's situation was almost as precarious as Junkers'; his most recent designs contained a multitude of structural and engineering problems, resulting in a refusal by Idflieg to order any of his aircraft. Furthermore, his chief designer, Martin Kreutzer, had died in a crash of one of his own planes six months earlier.³⁴ Choosing to minimize his own role in recent setbacks, Fokker blamed chance, competitor envy, and poor engine quality as chief causes behind his current problems.³⁵ He expressed interest in the J-4 design and declared himself ready to undertake production in the near future. Responding to Fokker, Junkers remarked that he was not in a position to guarantee large orders of the J-4: that was up to Idflieg.³⁶

Two days later, Fokker visited the Junkers works at Dessau, where he viewed the plans of the J-4, and inspected the Research Institute. Continuing to express his delight in the prospect of a joint venture, Fokker enthused over the seminal importance of Junkers' work.³⁷ After taking a test flight in the J-4 prototype on 22 January, Fokker announced his readiness to negotiate. He offered Junkers five hundred thousand marks for the right to manufacture the J-4 under license, together with compensation for the use of Junkers patents and any other assistance granted by the Junkers Works. Junkers, no doubt aware of Fokker's propensity for "intellectual property takeover," responded with more strict conditions—a non-refundable five hundred thousand mark deposit, together with a ten percent unit charge per plane produced. Additionally, Junkers reserved the right to issue further licenses to whomever he wished, and also to control the use and application of his patents within the design. Furthermore, Fokker committed himself to neither direct nor indirect action against the furtherance of patents or licenses granted to others by Junkers. Finally, all aircraft produced required a shield installed in plain sight with the inscription "Patent Junkers."³⁸

Predictably, Fokker declined to accept Junkers' terms, particularly the stipulation that the deposit be non-refundable. Despite this early sparring, however, both sides realized that Idflieg expected an agreement. The following day, representatives for the two firms met to continue negotiations at Fokker's corporate headquarters, the Hotel Bristol in Berlin. Fokker, having "suddenly fallen ill," could not attend, and instead sent his business manager, Wilhelm Horter. The Junkers representative, Director Lottmann, asked what had occurred to change Fokker's mind regarding a partnership. Horter replied that he had no influence over Fokker in these matters, "he does what he wants."³⁹ Lottmann noted that the latent worth of the license far exceeded the amount originally proposed, and that Junkers only sought to protect the future financial security of his research institute and his firm. Horter promised to discuss Junkers' terms with Fokker again, a noncommittal refusal

that Lottmann recognized and noted, but by now the damage was done.⁴⁰

Thus the “marriage from above,” decreed and arranged by military authorities, was troubled from the start, beginning, as it did, in an atmosphere of mutual suspicion and distrust. Despite these concerns, however, Idflieg maintained its pressure and leverage, and slowly forced both parties together through a combination of coercion and incentive. Meanwhile, the two future partners continued to spar. In April 1917, Fokker informed Junkers that he no longer desired to produce the J-4 under license; he wanted only to use Junkers’ patented wing designs.⁴¹ For Fokker, by now the agreement with Junkers had served two purposes. First, it facilitated his return to favour with Idflieg and the war ministry, and second, it gained him access to Junkers’ advanced wing technology, whose design characteristics far exceeded any known by Fokker and his designers.⁴² The development and production of the J-4 now represented little more than a vehicle to further these goals. For Junkers, however, the stakes were much higher. Having spent over one and a half million marks of his own money on aircraft research over 1915 and 1916, he no longer possessed the means to continue his work independently.⁴³ Faced with Idflieg’s position that no large orders would be granted without amalgamation with an established producer, he sought to influence the state-decreed merger with Fokker as best he could. Refusing to grant Fokker the right to use the patented wing design in his own aircraft, Junkers demanded that only a new joint-stock company, and not the Fokker Aircraft Works in Schwerin, would be granted this privilege. Fokker, eager to retain independence for his Schwerin factory, agreed, and on 20 October 1917, a new company, the Junkers-Fokker-Werke A.G. Metallflugzeugbau, known thereafter as Ifa, was formed.⁴⁴

Terms of the agreement reflected the compromise reached over the previous six months. Initially, Fokker had refused to enter into a union with Junkers without the financial backing of a larger industrial concern. Through Wilhelm Horter, in a meeting with Junkers representatives in Berlin on 13 June, and then again six

weeks later in a letter to Junkers on 27 July, Fokker pressed for the involvement of a large, established firm in the agreement, such as the Stinnes steel concern or electricity giant A.E.G., to provide financial support.⁴⁵ When Junkers refused to either consider this or Fokker's additional demand that he control all operational aspects of the new firm, Idflieg stepped in and ordered the creation of a new joint-stock company with a capitalization of 2,630,000 marks, 630,000 marks of which would be funded by a war ministry subsidy.⁴⁶ This action revealed the relative power of all three parties. Despite personality and corporate differences between Junkers and Fokker, the war ministry determined its interests warranted a forced merger regardless of the consequences. Perhaps believing that their role as intermediaries could smooth the way, and recognizing they possessed few other options to produce the design, Idflieg officials presided over the official signing of the merger documents on 20 October 1917.

Junkers provided all fixed assets for the new enterprise: land, buildings, equipment, and raw materials from the Dessau works. Shares valued at two million marks went equally to Junkers and Fokker, and Fokker agreed to buy his stock from Junkers at the rate of 118.5 percent. Fokker received the title of director, with responsibility for production, while Junkers, as chief designer, was responsible for research and development. Army subsidies paved the way for new production facilities at Dessau, and the workforce grew from two hundred to over one thousand by the end of 1917. Junkers retained control of the Dessau Research Institute, and the terms of Ifa's founding stipulated that advances in design based on Junkers' patents and research work would be utilized only by the new firm, or could be granted either to the Fokker Aircraft Works in Schwerin or to Junkers & Company for two hundred and fifty thousand marks plus a nine percent subsidy per aircraft built. The new firm immediately began production of the J-4, known in the army as the J-1, and 220 of the armoured infantry-support aircraft, known as "Möbelwagens" ("Furniture Vans") because of their box-like fuselage, were delivered between October 1917 and January 1919.⁴⁷

The design fared well at the front, particularly during the spring 1918 offensive, and the firm received many grateful messages from German aviators who had been saved by the plane's "steel bathtub."⁴⁸

The state-directed union appeared to give Fokker a distinct advantage. By separating the new firm from his other facilities, Fokker seemed to be in the best position possible, having redeemed his relationship with Idflieg authorities. He returned to Berlin, and with new technical knowledge gained during his time at Dessau, focused on regaining his position as Germany's pre-eminent aircraft manufacturer.⁴⁹ For Junkers, the union saved his aviation research and provided much-needed financial assistance, as well as a large aircraft order, but meant that the army no longer considered Junkers' core firm, Junkers & Company, as a viable aircraft production concern in its own right.⁵⁰ Correctly assessing Fokker's ultimate intentions, Junkers sought to end the partnership as soon as possible. A personal note that Junkers recorded on 6 March 1918 spelled out his intentions, and revealed how disillusioned he had become with his partner. The note bore the sarcastic title, "Fokker's Patriotism":

Just as he (Fokker) has disowned his congenital Dutch nationality, in view of his character traits there is not the least doubt that he will seek to conceal his German nationality if he sees an advantage in it.

(1) Characteristics: Ambitious, inconsiderate, brutally self-interested, unscrupulous in the use of methods to achieve his goals....

(2) Goals: Wealth, prestige, a dominant position in aircraft, weapons, and motor science. Inconsiderate pursuit of all those who stand in his way, especially competitors (Junkers, Siemens.)⁵¹

Junkers' attitude stemmed both from Fokker's behaviour during Ifa's foundation and his crash-landing of another aircraft, the J-7, during army trials in December 1917. The J-7, a duraluminium evolution of the J-1, was a product of Junkers & Company, and appeared superior to all other designs in the trial, including Fokker's own entrant.

Although no direct evidence exists to suggest that Fokker deliberately crashed the aircraft, the circumstances of the incident and Fokker's capabilities as a pilot imply that his intentions were to destroy the J-7 and obtain the army's new fighter contract, worth ten million marks, for himself.⁵²

The stakes were high, as the beginning of the High Command's "America Program" demanded two thousand aircraft per month from the industry. New fighter designs were eagerly awaited at the front, where, once again, Allied aircraft controlled the skies due to superior performance. Idflieg authorities hoped their Fokker-Junkers union would boost production of Junkers designs, and that Fokker's involvement would encourage Junkers to compromise on the composition of his aircraft and merge the reliability and security of metal with the ease and workability of wood. When it became clear that Junkers rejected Fokker's involvement in any design decisions, and Fokker showed no interest in developing an active role in the enterprise, Wagenführ suggested the two parties arrange a separation. Reflecting on this proposal at his mountain home in Bavaria on 24 March 1918, Junkers noted that he favoured a separation from Fokker only if a new partner could be found who would both "guarantee a harmonious union" and "support the activities of the research institute."⁵³ He observed that several Ifa directors, especially those who had come from Fokker, sought to destroy the freedom of the research institute by controlling its ability to allocate licenses and thus maintain an independent financial base. In his view, attempts by Ifa's board to spin off the research institute from his other companies would destroy the entire enterprise. Lacking the financial resources to buy Fokker out, however, Junkers' hands, at that moment, were tied.⁵⁴

In April 1918, Junkers drafted a letter to Wagenführ's superior, Major Siegert, the inspector of flying troops, in which he noted the Ifa board's attempts to circumvent his authority by decreeing research priorities and allocating funds for specific tasks. Junkers argued that this practice, aimed at him, worked directly against the interests of the state by curtailing research into areas not

deemed immediately profitable. Faced with this environment, Junkers informed Siegert that he intended to take back control of the research institute by absorbing it into Junkers & Company. He noted to himself that Ifa would use all means at its disposal to prevent such a move, but that he would press on regardless.⁵⁵ Despite his efforts, Junkers appeared to face an uphill battle. The same day Junkers drafted his letter to Siegert, Junkers & Company director Paul Spaleck telephoned Idflieg authorities and asked whether the firm would receive any new orders for aircraft. The conversation soon became a farce. Lieutenant Kersten of the inspectorate replied that "it had been decided only Ifa would be awarded contracts."⁵⁶ As the conversation continued, it became clear that the inspectorate favoured the cause of its creation, Ifa, rather than the core Junkers firm. When Spaleck asked about the status of an experimental order placed with Junkers & Company for five new aircraft, another official, Captain Schwarzberger, replied that "Ifa was created for the purpose of taking over the Junkers & Company aircraft factory."⁵⁷ When Spaleck responded by noting that the founding protocol of Ifa allowed for the continued production of aircraft by Junkers & Company, Schwarzenberger replied that that was a private matter. Spaleck retorted that the founding of Ifa had supposedly also been a private matter, although everyone knew that Idflieg had been the catalyst.⁵⁸

Fortunately for Junkers, contingent circumstances intervened. By the middle of 1918, the German Empire was in crisis. Aware of the Spring Offensive's failure in the west, the High Command chose to focus on the victory in the east to deflect public awareness from the imminent collapse. On the Western Front, German pilots faced their Allied adversaries, now joined by American pilots and planes, with inferior numbers and machines. The America Program failed to deliver two thousand planes per month as planned, and soon Idflieg began to look throughout Germany for facilities to produce more aircraft.⁵⁹ Junkers & Company, dismissed from earlier calculations, reappeared as a possible choice. Development of aircraft continued there despite the absence of military orders and Ifa's best efforts. In

September 1917, the duraluminium J-7 prototype had appeared, only to be seriously damaged by Fokker's "accident" four months later. A successor, the J-9, flew in April 1918, and in early May, Idflieg gave verbal approval for an order of twenty of the new aircraft, six to be delivered in June, and the rest in July.⁶⁰ Although supplies of duraluminium initially proved difficult to obtain, an agreement with the Düren firm, which possessed a temporary surplus due to a lessening of demand from the Zeppelin works, produced the required amounts, and production began immediately.⁶¹ Professor Junkers, surely aware of the bittersweet irony of this official reversal, noted the wastage of time and resources by army officials in his diary on 23 May, and cynically summarized the official stance of officials like Major Wagenführ:

They said to Junkers: Yes, your ideas are very valuable, but before we support you, before we compensate you for your work, you must bring proof that your construction has proved itself in practice, that is at the Front. Go to Capitalists and ask them for money first! And then at the same time search for a clever practical man who can make your theoretical things practical. When you have made your craft front-ready, then we will take advantage of you by providing you with large orders and reasonable prices, out of which you can support all your costs and efforts.⁶²

Work on the new planes proceeded slowly throughout the summer of 1918. Labour and raw material shortages meant that only three were ready by the beginning of August, and complaints from Idflieg over construction delays further soured relations between officials and the firm.⁶³ By the war's end, only twelve had been delivered.⁶⁴

While construction continued, Hugo Junkers began charting the course of his eventual independence. In a personal inventory tabulated on 28 July 1918, he estimated the value of his companies with the aim of presenting a prospectus to creditors in order to raise enough capital to buy Fokker out.⁶⁵ Two months later, he reiterated this aim in a letter to his Berlin agent, Major Seitz; "My concept and my plan...is to immediately obtain the money and buy Fokker out,

the sooner the better, without the help or knowledge of the Treasury or the war ministry.”⁶⁶ Once again, however, events interceded, making Junkers’ plan unnecessary.

In July 1918, Kogenluft, the commanding general of the German air forces, decided to reorganize the Inspectorate of Flying Troops in a last-ditch effort to maximize production and win the war.⁶⁷ With this reorganization came new priorities and attitudes, and particularly a change in the official stance towards Professor Junkers and his aviation research. On 17 August, Junkers representative Major Seitz wrote to Professor Junkers in Dessau, informing him of the new atmosphere: “Today the War Minister spoke warmly and hopefully about the state of our affairs.... He said: ‘Send only one aircraft for proofing; the Prince will support Professor Junkers at the Front.’”⁶⁸ The following day, Seitz wrote again, informing Junkers that Dr. Archenhold, a new member of the inspectorate, was “dead keen on Junkers, the research institute and everything that you do.... In the future he will control valuable connections.”⁶⁹ Seitz also mentioned the changed attitude of the inspector of flying troops, Lieutenant-Colonel Siegert:

Siegert is again warmly supporting our achievements and goals.... He said, ‘please arrange for Junkers to come see me and tell me his troubles immediately!’.... Of Fokker, Siegert said that he had knowingly enriched himself by copying the intellectual property of others.... I explained the fundamental difference between the superficial, cost-driven work of Fokker and the solid, high quality achievements of Junkers to Dr. Archenhold. [Archenhold]...enjoys close relations with Kogenluft, and he will try to set up a meeting between his Excellency von Höppner and myself.⁷⁰

Events moved quickly. Seitz wrote again on 26 September with even better news:

Major Wagenführ has officially declared that he wishes to help us in every way. We may expect with certainty an order for approximately one hundred and fifty aircraft. He

could not commit to a higher number, but in any case an order of so many aircraft will give us a sufficient advance to buy out Fokker as a shareholder.... I believe that we may count on the assistance of Major Wagenführ and think that his influence on Fokker will succeed.... Our relationship with the Inspectorate has completely turned around.... Lieutenant Sporleder, adjutant of Lieutenant-Colonel Siegert, who for many weeks spoke of a “fantastical inventor” and wholly supported our opponent, now speaks with great confidence about the imminent upswing of the Junkers concerns.⁷¹

Unfortunately for Junkers, these reversals of fortune occurred against a rapidly fragmenting and chaotic background. Germany’s military and political situation deteriorated as its allies dropped out of the war. By September 1918, the High Command realized that defeat was inevitable. The army, retreating back towards the German frontier, began to break down as supply lines disintegrated and conscripts deserted or refused to leave Germany. On 4 November, sailors at Kiel mutinied after learning that their officers planned to lead them into an honourable but suicidal *Todeskampf* (death struggle).⁷² The revolution spread quickly throughout Germany, as soldiers and sailors disarmed their officers and formed councils. One week later, on 11 November, hostilities ended. Military rule collapsed, and the Republican era began.

In Dessau, where the revolution occurred relatively quietly, Hugo Junkers conducted negotiations with Fokker and contemplated the future of his holdings. Fokker, now very motivated to leave Germany after narrowly escaping from a worker’s council in Schwerin, learned of Junkers’ change of fortunes in Berlin.⁷³ Realizing that his opportunity to recoup any funds from Ifa might be slipping away, Fokker wrote to Major Seitz on 13 November with his terms. Estimating his share of Ifa to be worth 1,595,000 marks, plus 200,000 more that he expected to receive as profit for production during 1918, Fokker declared his willingness to reach an agreement for 1,800,000 marks.⁷⁴ Seitz replied with his own figures, arguing that, under current circumstances, Fokker’s share of the firm

amounted to only 1,465,000 marks, and noted that this figure represented the highest amount he could offer.⁷⁵ Fokker responded the next day, arguing that Seitz's numbers, which included the contentious issue of the 500,000 mark non-refundable license, were too low. Regarding the license fee, Fokker argued that this was a separate issue, irrelevant to current negotiations. Fokker set his revised price at 1,740,000 marks.⁷⁶ Seitz replied immediately again, reiterating his offer of the previous day, and informing Fokker that his estimate of Ifa's profits for 1918 was wrong; in fact, Ifa would incur a loss. Seitz also noted that with the current chaotic political situation, it could not be assumed that the army still possessed the power to honour its price agreements.⁷⁷ Fokker responded, arguing that the figures would be available to determine whether Ifa made a loss or profit for 1918 within a few days, and that once these figures became available, both parties could agree on a settlement sum.

Seitz, duly armed with Ifa's 1918 figures, replied three days later. Calculating that Ifa's losses for 1918 totalled 354,638 marks, he pushed for a compromise. Perhaps aware of Fokker's precarious situation in Schwerin, where revolutionary guards now controlled the factory, Seitz pressed Fokker to settle, warning that if an agreement could not be reached, the military authorities would be notified of Fokker's intransigence. Cleverly, Seitz followed his threat of a stick with a carrot—an increase of Junkers' offer to 1,600,000 marks, and the promise of immediate payment.⁷⁸ Fokker declined to accept the offer immediately, but as his circumstances worsened throughout December 1918, he became more receptive. Meanwhile, Junkers received the best news imaginable. On 27 November, Seitz wrote to Junkers informing him that the inspectorate had approved his plan to unite Ifa and Junkers & Company, and would be granting him an advance of 2,600,000 marks for this purpose.⁷⁹ On 5 December, official approval came, and the inspectorate also awarded all existing raw material stocks then present at Dessau to Junkers.⁸⁰ On 9 December, Seitz authorized the transfer of 1,490,000 marks to Fokker.⁸¹ Although the partnership was not formally dissolved until 24 April 1919, Fokker's involvement in Ifa came to an end, and

Junkers renamed the firm “Junkers Flugzeugwerke A.G.,” retaining the Ifa acronym.⁸² Escaping to Holland in February 1919, Fokker faced Junkers in German and Dutch courts over patent disputes for twenty more years. Although the two men never saw each other again, the legal wrangling continued until 1940, after the deaths of both men.⁸³

Through these developments, Hugo Junkers and his group of firms emerged out of the war in a strong financial position. Through generous financial support from the army, Junkers now owned the new facilities of Ifa, and regained his control of all aspects of the firm. Although Junkers had only delivered 210 aircraft out of an official total of 47,931 produced by all German manufacturers up to November 1918, the cutting-edge characteristics of the Junkers design “system” ensured him a strong position in the postwar market, where the focus would shift to civilian designs for transport and, ultimately, passenger traffic.⁸⁴ Thus, despite its hardships, the war served Hugo Junkers well. His aircraft production facilities grew from a small section of one of the Junkers & Company buildings to manufacturing plants covering over twenty thousand square meters. The workforce expanded from fifteen in 1915 to over two thousand by November 1918.⁸⁵ New plant purchased by Ifa now lay at his disposal, and with the state-enforced union with Fokker dissolved, he once again directed all aspects of the Junkers Works. More wary than ever of external involvement in his affairs, Junkers sought to end his reliance on state contracts and create a new market for his aircraft in the civilian arena. He criticized the state’s wartime aviation policies in a note drafted just before the war’s end, where he remarked that state support of aviation throughout the war had been one-sided and insufficient. Junkers argued that the state, by focusing on granting large orders for front-proven designs, had disadvantaged itself by not realizing the latent potential of research and development over a longer period. He characterized state programs, such as the Hindenburg Program, as wasteful and inefficient. If the war really was *total*, as the High Command argued, then why was more effort not put into assuring that the state had the best and most modern

weapons available? These actions, Junkers wrote, precluded the possibility of success; the state, by focusing on quantity rather than quality through its policies and actions, failed to provide the conditions necessary for victory.⁸⁶

For their part, military authorities concluded that, during the war years, Junkers had placed his own agenda above urgent, if not critical, state requirements. His stubborn refusal to compromise construction techniques during the desperate years of 1917 and 1918 seemed to support this assertion. During the war, Junkers aircraft required four times as many workers to manufacture as wooden aircraft and took longer to complete.⁸⁷ The Fokker merger, seen by Professor Junkers as a heavy-handed decree “from above,” made good sense from the state’s perspective, as Junkers possessed neither the means nor the facilities for large-scale production of front-line aircraft. Junkers’ production facilities and workforce grew because of state assistance during the war, and all evidence shows that Idflieg officials like Felix Wagenführ, although desperately overworked and faced with enormous responsibilities, did all they could to assist Junkers while still pursuing the state’s primary interest—production of as many front-line aircraft as possible with existing resources.⁸⁸ Hugo Junkers emerged successful from the First World War while the German Empire perished. A small player in the wartime aircraft industry, Junkers had managed to avoid high levels of official scrutiny. This circumstance changed as his position in Germany’s aviation industry rose. What Junkers had hoped would be the end of state entanglements instead marked the beginning of a prolonged struggle between himself and the German government for control of his company and his technology—a struggle he would ultimately lose to the Third Reich.

Anthony Fokker initially appeared to be the biggest loser of the failed venture. Forced to flee Germany at the end of the war, his plant at Schwerin abandoned and many other assets in Germany and Austria permanently out of his reach, Fokker faced a mountainous tax bill and an uncertain future. Like Hugo Junkers, though, Anthony Fokker was a survivor. Shrewdly recasting himself as the foundation

stone of the new Dutch aviation industry, Fokker used his family's connections with the Dutch royal family to begin anew in his home country. His Dutch nationality was quietly restored, and tax obligations across the border satisfied amid hyperinflation and legal compromise.⁸⁹ Before leaving Germany, he had managed to commandeer six trainloads of equipment, as well as millions of marks in liquid capital, more than enough to begin again in Holland. In an ironic circumstance, the former partners would become rivals in the *Reichswehr's* secret rearmament strategy during the 1920s. In this contest, the foreigner, Fokker, rather than the "loyal German," Junkers, would prevail, and over the Russian steppes, Fokker designs would train the next generation of German fighter aces.

Notes

- ¹ Throughout this process, Junkers pursued a conservative approach to aviation development and design. Believing that the future of aviation rested in all-metal, internal construction to ensure reliability and safety, Junkers proceeded slowly and cautiously, refusing to hurry construction and insisting on multiple stages of theoretical evaluations, stress analysis and pre-flight trials. This approach was in line with his perception of aviation as a system, consisting of aero-engines, airframes and support machinery, all devised and produced by Professor Junkers himself.
- ² See the discussion in Chapter One of Richard Byers, "Power and Initiative in Twentieth Century Germany: The Case of Hugo Junkers" (PhD diss., University of Georgia, 2002). The file can be accessed through the University of Georgia's Electronic Theses and Dissertations Database, located at http://dbs.galib.uga.edu/cgi-bin/ultimate.cgi?dbs=getd&userid=galileo&action=search&_cc=1 (Search by author's name).
- ³ For a discussion of these years, and for the best biographical analysis of Fokker, see Marc Dierikx, *Fokker: A Transatlantic Biography* (Washington: Smithsonian Institution Press History of Aviation Series, 1997).
- ⁴ See Dierikx's discussion of Fokker's clandestine purchase of a Morane-Saulnier aircraft in December 1913 for this purpose in *Fokker: A Transatlantic Biography*, 22-23, and also the more controversial adaptation of Swiss engineer Franz Schneider's gun-synchronization mechanism, 29-35.
- ⁵ John Morrow, *Building German Airpower* (Knoxville: University of Tennessee Press, 1976), 27.
- ⁶ Ibid. De le Roi would go on to become an employee of Luftverkehrsgesellschaft, the sales agent for Albatros, Germany's largest aircraft manufacturer during the First World War. This relationship between private industry and members of the military would be emulated by Junkers, whose General Agent in Berlin after 1917, Major Wilhelm Seitz, formerly worked for the war ministry.
- ⁷ John Morrow, *German Airpower in World War I* (Lincoln: University of Nebraska Press, 1982). This order gave Fokker his first large capital infusion.
- ⁸ Numbers quoted by Dierikx in *Fokker*, 26, note 10.

- ⁹ See the letter from Hermann Fokker to Tony in Dierickx, *Fokker*, 19, where, in no uncertain terms, the elderly Fokker informs his son that no further financial support will be forthcoming.
- ¹⁰ Dierickx, *Fokker*, 21.
- ¹¹ John Morrow notes in his study of the German air forces that “equipping a unit with different types of aircraft unnecessarily complicated the supply of spare parts. Intermediate air parks often had no liaison with their frontline units.... Pilots who had crashed their machines at the front could be found lounging around factories in Germany waiting their turn for new airplanes. Unit leaders zealously sent flying officers in lorries to aircraft factories to commandeer airplanes and drive them to local railway stations for shipment to the front.” Morrow, *German Airpower*, 17-18. Fokker used this situation to his advantage, catering to the pilots in an effort to generate business. A skilled and daring pilot himself—he had narrowly escaped death several times already by the war—Fokker’s ability to mix and identify with front-line pilots served him well. His approach proved successful, as the endorsement of Fokker aces such as Oswald Boelcke, and later Manfred von Richthofen, carried significant weight within army procurement circles. The photograph of Fokker and von Richthofen in Dierix, *Fokker*, between 86-88, with both wearing flight goggles, suggests a sense of *camaraderie* between the two that Fokker cultivated into friendship.
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Morrow, *German Airpower*, 19.
- ¹⁵ Morrow, *German Airpower*, 20. Morrow argues that the industry missed an opportunity to increase its leverage in the relationship, since the army would have been forced to agree to the industry’s requests over time.
- ¹⁶ Dierix notes that “German authorities ‘advised’ Fokker that it would be in his best interest.” See *Fokker*, 28.
- ¹⁷ Although this association between Fokker and the German Regime has succumbed to the erosion of time, many still today implicitly accept a link between Hugo Junkers and the Third Reich, even though no such link existed.
- ¹⁸ Dierix, *Fokker*, 38-40.
- ¹⁹ Internal memorandum on the development of the first Junkers metal aircraft, 7 December 1918, Junkers Archive, Deutsches Museum, Munich (abbreviated subsequently as DMM JA), Propaganda 898.
- ²⁰ Master Otto Siefert, who worked on the J-1, later recalled that the sheet iron proved extremely difficult to shape, and would repeatedly warp if subjected to too much stress. See Wolfgang Wagner, *Hugo Junkers, Pionier der Luftfahrt: Seine Flugzeuge* (Bonn: Bernard und Graefe Verlag, 1996), 81.

- ²¹ Overview of the Development of the Construction Methods of Metal Aircraft by Professor Junkers - Aachen and the firm Junkers & Co. (1.5.14.- 1.10.1917), 14 March 1918, DMM JA Propaganda 474=896.
- ²² Wagner, *Hugo Junkers*, 81.
- ²³ Letter from Junkers to Wagenführ, 11 January 1916, DMM JA Flugzeugbau 0201/4/4.
- ²⁴ Notice to Junkers & Co. from the Inspectorate of Flying Forces, 15 February 1916, DMM JA Flugzeugbau 0201/4/12.
- ²⁵ Junkers refers to this in a letter to the war ministry on 30 August 1916, DMM JA Flugzeugbau 0201/4/31.
- ²⁶ Junkers wrote to Idflieg explaining the delays on the first of September, noting that "despite great efforts only 28 extra workers had been gained in three months.... The problem of personnel is the greatest hindrance to the healthy development of the aircraft.... With only 100 workers, about two thirds of whom are completely occupied with modifications, improvements, repairs and so forth, one cannot operate a serious aircraft factory." Letter from Junkers to Idflieg, 1 September 1916, DMM JA Flugzeugbau 0201/4/32.
- ²⁷ Notice to Junkers & Co. from the Inspectorate of Flying Forces, 30 March 1916, DMM JA Flugzeugbau 0201/4/20.
- ²⁸ Letter from Professor Junkers to war ministry, 30 August 1916, DMM JA Flugzeugbau 0201/4/31. To achieve this aim, he proposed that the Ministry provide support in four ways. First, compensate him for construction of his aviation research facilities, such as the Dessau research institute and neighboring wind tunnel. Second, place orders for more aircraft. Third, publicize his achievements to encourage an influx of private capital, and fourth, assist him in finding more skilled workers and engineers.
- ²⁹ Letter from Professor Junkers to war ministry, 6 October 1916, DMM JA Flugzeugbau 0201/4/31.
- ³⁰ Letter from Oschmann to Junkers & Co., 24 October 1916, DMM JA Flugzeugbau 0201/4/31.
- ³¹ Ibid.
- ³² Wagner, *Hugo Junkers*, 93.
- ³³ Protocol of Negotiations with Director Fokker on 16 and 18 December 1916, DMM JA Flugzeugbau 0201/11/1.
- ³⁴ Marc Dierickx, *Fokker: A Transatlantic Biography*, 38.
- ³⁵ Protocol of Negotiations with Director Fokker on 16 and 18 December 1916, DMM JA Flugzeugbau 0201/11/1, p. 2.
- ³⁶ Protocol of Negotiations with Director Fokker on 16 and 18 December 1916, DMM JA Flugzeugbau 0201/11/1, p. 5. Interestingly, Dierickx writes that Fokker remarked that he was unable to begin production of the Junkers design in his factories, a circumstance not recorded in the protocol. Despite this small

error, Dierickx's work provides the best portrait of the eccentric Dutchman yet produced.

- ³⁷ Letter from Junkers to Wagenführ, 2 January 1917, DMM JA Flugzeugbau 0201/11/4.
- ³⁸ Internal Memorandum "Position towards the Proposal of Fokker regarding the Granting of a License for the Aircraft Patent," 1 February 1917, DMM JA Flugzeugbau 0201/11/8. By this point it had become clear to Junkers that Fokker felt he did not need to enter into a corporate union and was seeking only to use the advances made by Junkers on the J-4 design for his own ends. Regarding Fokker's business history, Junkers was surely aware of the controversy surrounding Fokker's control of synchronized-machine gun manufacture, a circumstance made possible by the army's decision to lessen patent protection during the war. See Dierickx, *Fokker*, 33-35, and Morrow, *German Airpower*, 20-22.
- ³⁹ Protocol of conversation between Horter and Lottmann, 2 February 1917, DMM JA Flugzeugbau 0201/11/10.
- ⁴⁰ Ibid.
- ⁴¹ Letter from Fokker to Junkers, 16 April 1917, DMM JA 0201/11/12.
- ⁴² Dierickx notes the benefits derived from this knowledge in subsequent Fokker designs. In his words, "Cross-fertilization of ideas went beyond...conceptual resemblance." See *Fokker*, pp. 41-42.
- ⁴³ Inventory of research costs within internal memorandum, 28 July 1918, DMM JA 0201/8/10.
- ⁴⁴ Founding agreement of the Junkers-Fokker-Werke A.G. (IFA), 20 October 1917, DMM JA 0201/11/31.
- ⁴⁵ Report of confidential conversation with Horter by Director Eggers, 13 June 1917, DMM JA 0201/11/14, and letter from Fokker to Junkers, 27 July 1917, DMM JA Conzelmann, NL 123, Box 30.
- ⁴⁶ Letter from Fokker to Junkers, 27 July 1917, DMM JA Conzelmann, NL 123, Box 30, and Founding Agreement of IFA, 20 October 1917, DMM JA 0201/11/31.
- ⁴⁷ Table of Junkers-Metal Aircraft delivered to the Military Authorities until March 31, 1919, 7 April 1919, DMM JA Conzelmann, NL 123, Box 39.
- ⁴⁸ See the reports of company representative Schmidt, 1 April 1918, and Reserve Lieutenant Wagner, 23 May 1918, DMM JA Conzelmann NL 123, Box 39. Wagner noted that his machine had over 128 bullet holes in it, and that he was convinced it had saved his life.
- ⁴⁹ See Dierickx, *Fokker*, 41-43.
- ⁵⁰ Lutz Budrass, *Flugzeugindustrie und Luftrüstung in Deutschland 1918-1945* (Düsseldorf: Droste Verlag, 1998), 48. Budrass' magnificent work is now the

standard point of departure for researchers interested in this field. Currently it awaits an English translation to widen its audience.

- ⁵¹ Loose stenogram, 6 March 1918, DMM JA NL 21/2. Junkers goes on to characterize Wilhelm Horter, Fokker's business manager, as a "shady character and a paid spy."
- ⁵² See Günter Schmitt, *Hugo Junkers, Ein Leben Für die Technik*, (Planegg: Aviatik Verlag, 1986), 137-138. The subsequent awarding of the army contract to Fokker, for 400 planes at 25,000 marks apiece, supports the remarks of Ifa Director Hermann Schliessing, who noted that "all evidence points to the fact that (Fokker) committed the act with consideration." Interestingly, Dierikx notes this occurrence but draws no conclusions regarding Fokker's actions. See Dierikx, *Fokker*, 41-42.
- ⁵³ Loose stenogram, 24 March 1918, DMM JA Conzelmann NL 123, Box 22.
- ⁵⁴ Ibid.
- ⁵⁵ In the letter, Junkers informed Siegert that "the great influence and intensive efforts of Fokker have succeeded in bringing about a situation where the Aircraft Construction section of Junkers & Co. is prostrate and the existence of the research institute has been undermined, and no quick cure will work.... Major Wagenführ doesn't see things correctly, he misjudges the purpose of the research institute (scientific, not economic!). He overestimates the importance and help of Fokker.... Fokker has demonstrably harmed us more than helped us." Loose stenogram, 17 April 1918, DMM JA Conzelmann NL 123, Box 22.
- ⁵⁶ Report of Long Distance Call with the Inspectorate of Flying Troops, 17 April 1918, DMM JA Conzelmann NL 123, Box 39.
- ⁵⁷ Ibid.
- ⁵⁸ Ibid. Concluding the report, Spaleck noted that the Idflieg officials chose to hide behind each other by claiming that none of them individually held the power to grant orders, although Major Wagenführ had done so for years.
- ⁵⁹ Morrow, *German Airpower*, 119.
- ⁶⁰ Letter from Junkers & Co. to Inspectorate of Flying Troops, 8 May 1918, DMM JA Conzelmann NL 123, Box 39.
- ⁶¹ Report of conversation between Director Spaleck and Düren Directors Beck and Gunkel, Continental Hotel, Berlin, 18 April, 1918, DMM JA NL 21/2.
- ⁶² Loose stenogram, 23 May 1918, DMM JA Conzelmann NL 123, Box 22. Emphasis in original.
- ⁶³ Letter from Spaleck to company representative Seitz, 26 July 1918, DMM JA Conzelmann NL 123, Box 39.
- ⁶⁴ Table of Junkers-Metal Aircraft delivered to the Military Authorities until March 31, 1919, 7 April 1919, DMM JA Conzelmann, NL 123, Box 39.
- ⁶⁵ Personal memorandum, 28 July 1918, DMM JA Flugzeugbau 0201/8/10.

- ⁶⁶ Draft of letter from Junkers to Seitz, 26 September 1918, DMM JA Conzelmann NL 123, Box 39.
- ⁶⁷ Morrow, *German Airpower*, 128. Morrow argues “the fragmentation of the inspectorate may...be interpreted as an attempt to decrease even more the inspectorate’s power in favor of the frontline air force in the all-important area of fighter development.”
- ⁶⁸ Letter from Seitz to Junkers, 17 August 1918, DMM JA Flugzeugbau 0201/8/50.
- ⁶⁹ Letter from Seitz to Junkers, 18 August 1918, DMM JA Flugzeugbau 0201/8/50.
- ⁷⁰ Ibid. General Ernst Wilhelm von Höppner, formerly a Cavalry officer, commanded the German air forces from 1916 to 1918.
- ⁷¹ Letter from Seitz to Junkers, 26 September 1918, DMM JA Flugzeugbau 0201/8/51.
- ⁷² Hans Mommsen, *The Rise and Fall of Weimar Democracy* (Chapel Hill: University of North Carolina Press, 1996), 1-50.
- ⁷³ Dierickx, *Fokker*, 52-55.
- ⁷⁴ Letter from Fokker to Seitz, 13 November 1918, DMM JA Flugzeugbau 0201/12/43.
- ⁷⁵ Letter from Seitz to Fokker, 13 November 1918, DMM JA Flugzeugbau 0201/12/43.
- ⁷⁶ Letter from Fokker to Seitz, 14 November 1918, DMM JA Flugzeugbau 0201/12/43.
- ⁷⁷ Letter from Seitz to Fokker, 14 November 1918, DMM JA Flugzeugbau 0201/12/43.
- ⁷⁸ Letter from Seitz to Fokker, 18 November 1918, DMM JA Flugzeugbau 0201/12/43.
- ⁷⁹ Letter from Seitz to Junkers, 27 November 1918, DMM JA Flugzeugbau 0201/8/54.
- ⁸⁰ Letter from Wagenführ to Seitz, 9 December 1918, DMM JA Flugzeugbau 0201/8/39.
- ⁸¹ Letter from Seitz to Frank, 9 December 1918, DMM JA Flugzeugbau 0201/8/39.
- ⁸² Walter Zürl, *Deutsche Flugzeugkonstrukteure: Werdegang und Erfolge unsere Flugzeug und Flugmotorenbauer* (Munich: Pechstein, 1942), 58.
- ⁸³ Dierickx, *Fokker*, 42.
- ⁸⁴ Table of Junkers-Metal Aircraft delivered to the military authorities until March 31, 1919, 7 April 1919, DMM JA Conzelmann, NL 123, Box 39. The total for all aircraft is that cited with reservations by Morrow, *German Airpower*, Appendix 1, 202.

- ⁸⁵ See Wagner, *Hugo Junkers*, 140, and Schmitt, *Hugo Junkers and his Aircraft*, 39.
- ⁸⁶ Loose stenogram, 24 October 1918, DMM JA Conzelmann NL 123, Box 22. Olaf Groehler and Helmut Erfurth, in their work *Hugo Junkers: Ein Politisches Essay*, note that “Junkers saw his creations and his firms as concentrated expressions of invention and quality.... Subordination and command economies—like those of the World War—were horrifying to him. From this perspective he often spoke of how lucky Germany had been to lose the war. Junkers viewed the war’s end as the end of an epoch of armaments, the overcoming of class, hierarchy and ossification, of militarized economies and compulsory state intervention, of stupidity and intellectual narrow-mindedness, of bureaucracy and uniformity.” Olaf Groehler and Helmut Erfurth, *Hugo Junkers: Ein Politisches Essay* (Berlin: Militärverlag der DDR, 1989), 23.
- ⁸⁷ Morrow, *German Airpower*, 105.
- ⁸⁸ In an interview in 1939 Major Wagenführ repeated this assertion, arguing that he did all he could to further Junkers’ research, and that after the war Junkers wrote to him recognizing his achievements. He also noted he only brought Fokker and Junkers together to help Junkers. See Interview with Lieutenant-Colonel (retired) Felix Wagenführ, 17 March 1939, DMM JA Conzelmann NL 123, Box 45/2.
- ⁸⁹ See Dierikx, *Fokker*, 72-74.