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Changing Lanes under British Command

The Transformation of Volkswagen from a Factory into a Commercial Enterprise, 1945 – 1949

HISTORICAL NOTES
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Changing Lanes under British Command

The Transformation of Volkswagen from a Factory into a Commercial Enterprise, 1945 – 1949

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1. Introduction

Like no other company in the 1950s, the Volkswagen plant reflected the economic rise of West Germany and its transition to a consumer society. The Beetle, reproduced a million times over, quickly exceeded all expectations and advanced the belated motorization of German society. As the most important export, it brought foreign currency to the domestic economy and an international reputation to the new Bonn republic. Moreover, as it became ever more common on the road network – which state infrastructure improvements were expanding at the same time – the Volkswagen Beetle came to symbolize the advent of a new era shaped by material prosperity and consumption, even though most private households were unable to afford one before the end of the 1950s.[1] Alongside the cigar-smoking German chancellor of 1963-66, Ludwig Erhard, who, in contrast to the strict patriarch Konrad Adenauer, embodied the hedonistic side of the republic, the Volkswagen became an icon in the economic founding mystique of the Federal Republic of Germany.[2]

This mystique is based upon a solid economic core: without challenge, Volkswagen assumed a role of leadership in the German automobile industry. This industry, in turn, rose to become a key industrial sector in the years of the economic miracle and fostered growth and modernization in many economic areas because its orders and deliveries were integrated into the larger economy. Fundamental to the industry's function as the driving force of the economy was the adaptation of Ford's production concept. A decisive precondition was also the reconstruction of the world market under the aegis of the "Pax Americana." Only once West Germany was integrated into the world economy and export paths were opened, did it become possible for automobile firms to orient their investments to the logic of increasing economies of scale in industrial mass production.[3] At the same time, the exporting successes of the automobile industry significantly ameliorated and finally overcame problems of integrating into the world market caused by bilateral trade agreements and the dollar gap.[4]

Many contemporaries consider the development of Germany in the 1950s to be an economic miracle which began with the "shop window effect" of currency reform.[5] Three main factors account for the success of Volkswagen during this time: the concept of building factories for mass production combined with modern capital stock; the economic and currency reforms of 1948; and the introduction of Fordism, which is associated with Heinrich Nordhoff.[6] The founding mystique turns around this individual: supposedly, Volkswagen's rise to becoming an internationally successful automobile company began when Nordhoff was appointed General Manager in January 1948. This impression was fostered by Nordhoff's skillful self-promotion, and a clever publicity campaign designed by Volkswagen's chief press officer Frank Novotny.[7] Even the most recent Nordhoff biography remains trapped in this "master narrative", in ascribing the foundation of the present company to the effect of the General Manager. Consequently, it undervalues the achievements of the British Military Government, which administered the Volkswagen factory from 1945 to 1949 as its custodian.[8]

Volkswagen owes more to the British than the "King of Wolfsburg" wanted to admit. In any case, it took unusual optimism on the part of British control officers to stick to the idea of keeping the Volkswagen factory in operation and to pursue the development of automobile production for the civilian population. Thus, that the Volkswagen plant, which was in danger of being dismantled, survived the postwar planning of the Allied occupation powers, is due not only to British policies toward Germany, which aimed to revive the economy, and to the necessary export of Volkswagens for acquiring currency, but also to the personal engagement of the British officers.[9] In comparison, the Adam Opel Corporation lost the factory in Brandenburg, which was dismantled by the Soviets, as well as the conveyor line and the production equipment for the Opel Kadett in the factory in Rüsselsheim, which the Soviet Military Government acquired as a reparation payment.[10]

Up to now, historical research has credited the British with converting the plant to civilian production. It has also shown that the plant's position as an administered enterprise gave it a privileged position concerning supplies. The production order and the preferential delivery of raw materials in tight supply put the firm in a position to begin production of personal vehicles earlier than its competitors, who, for the most part, only built a few trucks for transport and delivery for the respective Military Governments until 1947/48. Thus, the British custodians gave the Volkswagen plant a head start.[11] Moreover, the export business that they stimulated helped the firm utilize its capacities more efficiently, making it more profitable,[12] while their efforts to find workers for the plant supported personnel development, which was characterized by a high rate of turnover.[13]

The role the British played in the technological and organizational reconstruction of the Volkswagen plant, which was accompanied by a realignment of the production process and of the firm's organizational structure, has only received sporadic attention up to now. The firm's now hallmark quality policies, as well as the Sales and Customer Service Department it established at that time, have been similarly sidelined. Since the company's largely intact production resources were the only assets it had at the end of the war,[14] the question simply has to be asked: what were the driving forces behind the company's development in the four-year period after the war from a Nazi armament factory into an automobile company capable of competing on the international market – one that had a head start in its domestic market and was also represented in several European markets with a highly respected, quality product? The studies presented in this volume hardly provide answers to this question. Instead, they seek to understand the development in terms of a process of reconstruction that was predetermined by modern technological advances and tremendous production capacity, and which – set into motion by the Allied need for transportation and supported by their preferential delivery of supplies – then succeeded on its own, more or less. If the company's development is understood in this way, then the Americanization of production in the 1950s did not so much build on the foun-

dation of British preparations but rather on an ambitious founding principle and modern means of production, which rendered the company predestined to take on a leadership role among West German automobile plants.[15]

But can the essence of the growth dynamic of the Volkswagen company in the 1950s really be attributed to the idea that it harvested the "fruits of fascism" and was able to utilize them for technological reform?[16] Did the sharp rise in the public company not disguise the fact that its starting position was anything but promising for the mass production of the Volkswagen Beetle?[17] The continuity perspective fails to take an elementary structural deficit into account that was already planted in the Nazi planning of the factory: with delusions of grandeur typical of the regime, the Nazis had used the Ford factory "River Rouge" in Detroit as their blueprint, building the Volkswagen plant as a Ford-like factory but not as a commercial enterprise. The price for the "Kraft durch Freude" (Strength through Joy), or KdF-Wagen – 990 Reichsmark – set by Hitler, but also the plans for immense capacities that were supposed to allow for the production of 1.5 million vehicles a year in its last stage of expansion, made it obvious that the political will to make the German "Volksgemeinschaft" a nation of car owners failed to seriously consider business cost calculations and market realities.[18] The Nazis simply suppressed the consumption side of Fordism, which required mass purchasing power. The company's lack of market orientation was most apparent in the system of KdF car savings as well as in the plan to deliver the vehicles to their "consumers" or buyers via the bureaucratic apparatus of the German Labor Front (Deutsche Arbeitsfront, DAF). Consequently, the DAF, in appointing main and subsidiary factories, did concern itself with customer service but did not attach any great value to developing a sales organization.[19]

The advent of the war, and the factory's conversion to arms production immediately after construction was completed, prevented serial production from starting. But by tying the company to the war economy, these changes also kept it from having to orient its organizational and cost structures toward profitable production. Instead, the Volkswagen factory developed into an arms factory with various emphases, including the manufacture of jeeps and amphibious vehicles. In sum, the starting conditions for the company, shaped by the Nazi founding principle and the war, were in no way favorable to the serial production of the Volkswagen Beetle, even though the factory buildings and equipment suffered less damage from Allied air strikes than the automakers Opel and Daimler-Benz had.[20] Both of these companies could fall back on a qualified core staff, whereas the Volkswagen factory had only a rudimentary group of permanent workers; after the forced laborers left in May 1945, their number shrank to 1,105.[21] Even the company's lack of a democratic tradition concerning the representation of factory-level interests proved to be a hindrance to the development of structures for worker co-determination; this made it difficult to expand the workforce and this challenge was not fully overcome until the 1950s.

The present book takes a risk in looking at the British era of the Volkswagen factory from a different point of view. It interprets the order to produce 20,000 Beetles given in August 1945 as an event that fundamentally altered the existing structures of the company and ultimately resulted in transforming it into a civil private enterprise. This development was by no means linear and goal-oriented; rather, it was a process – shaped by a variety of interest groups, improvisations, and setbacks – that occurred in three stages. The first stage stretched from the beginning of jeep production for the Allies to the conversion of the armament factory to civilian production in December 1945, when the serial production of the Volkswagen Beetle commenced. With this, the British had made a decision that had far-reaching consequences for the future development of the company, making it the only private vehicle manufacturer in postwar Germany until 1947. By comparison, the U.S. Military Government had granted Daimler-Benz permission to manufacture the Type 170 V in 1946 but stipulated that it had to be made as a small utility vehicle.[22]

The second stage encompassed the years 1946/47, during which the German factory directors reconfigured the plant's technological and organizational bases and propelled the expansion of the staff with the support of the British management. Spurred by British plans to export the Volkswagen Beetle, the company went from orienting its production to the mobility needs of the Allies to orienting its production to civilian demand with consideration of costs. The Volkswagen factory completed the "lane change" to a private commercial enterprise, which included securing co-determination rights for the workers' council established in 1945. Nonetheless, this development was not yet reflected in production figures, which were limited by a lack of sufficient materials and workers. Therefore the production remained irregular. At the same time, this phase equipped the company with indispensable know-how for competing on the market that would help its economic rise in the 1950s: The British established a quality policy, initiated and supported the creation of sales and customer service structures, and paved the way for the Volkswagen to emerge on the European market.

The third stage began when Nordhoff was appointed General Manager in January 1948 and ended when the Volkswagen factory was transferred to the German federal government. The British initiated this shift in leadership trusting that Nordhoff would be able to continue to align the company with the coming market competition and to exhaust the sales potential both domestically and in foreign markets. To help him master this task, they gave him a great deal of autonomy. Taking full advantage of the basic conditions that improved dramatically with the currency conversion, Nordhoff continued to develop the sales and customer service structures and to improve product quality, and he carried forth the British export policies. In addition, Nordhoff strengthened the company's competitiveness by reducing costs and diversifying its products. Compared to its competitors, the Volkswagen Corporation found itself in the pole position when the British handed it over to the custodianship of the German federal government on October 8, 1949, making it a publicly owned company.

In 1999, the first edition of *The British and their Works* appeared, marking the fiftieth anniversary of the factory's transfer to German control and giving the British intermezzo its rightful place in the company's memory. The sixtieth anniversary provided an occasion for evaluating more fully the store of files on the British period, which are now more complete than before. What began as revision became, in many parts, a new book that looks upon its object from a different perspective. More precise in its concepts and structure, it describes the transformation of the Volkswagen factory to a commercial enterprise, completed under British direction, not as immanent to the technological structures but as a contingent and dynamic process that was shaped by the constructive pragmatism of British occupation policy. At the end of this development, an automobile company had emerged in which the basic characteristics of the present Volkswagen Corporation could already be discerned.

2. The Luck of the Vanquished

2.1 From Arms Manufacturer to Administered Enterprise

Sirens warning of the approach of tanks rang out in the evening hours of April 10, 1945, harbingers of a democratic age in the "Stadt des KdF-Wagens" (City of the KdF Car) founded near Fallersleben. In the Volkswagen factory, the assembly lines stood still; an agonizing period of waiting began. At dawn, American troops passed through the camp city, crossed over the Mittelland Canal, and left a small unit of tanks in Fallersleben to secure the area for the troops that followed. There was no resistance. The SS had long since moved out and the Volkssturm was on its way to Tangermünde. In the ensuing power vacuum, the freed forced laborers vented their bitterness and unloaded their anger on their former oppressors. Isolated looting and the threat of attacks on the population spurred some vocal residents to ask the nearby U.S. troops for help, and these moved in the next day to occupy the Volkswagen factory and the city. Order descended on the lawless area that would later be named Wolfsburg.[23]

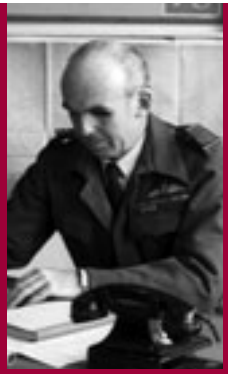
Even before the German empire capitulated on May 8 and 9, 1945, American units began to set up a repair shop for their vehicles at the Volkswagen factory. There, they met with a committee comprised of former departmental managers and, on the recommendation of the magistrate they had appointed, they entrusted Rudolf Brörmann, the previous chief inspector, with the position of factory manager.[24] He persuaded them to have jeeps built from the available spare parts to serve their mobility needs. The Americans' order to resume auto production was perhaps the most important act they performed. Otherwise, the Volkswagen factory probably would have been treated like war booty, and Germans, too, would have plundered it. But with the order, production began in May 1945 on jeeps for the U.S. Army: under provisional conditions, a total of 133 were completed.[25] On May 14, 1945, the press officer of the U.S. forces made an announcement concerning further intentions for the plant: "By order of the Allied Military Government, the Volkswagenwerk at Fallersleben has resumed production and 10 vehicles of the well-known Jeep type (Kübelsitzer) are leaving the line every day. Production will be increased shortly. It is planned to take up manufacture of the passenger car type as soon as possible. The cars are destined for the occupation army and, at a later date, for German administrative authorities and private owners."[26]

The Work of the British

But it did not come to that. The intermezzo under American occupation – as brief as it was vital – ended when the region came under British command. In June 1945, the Control Commission for Germany, British Element (CCG-BE), assumed responsibility for the Volkswagen factory and seized the former German Labor Force company in accordance with Allied Control Council Law 52. Until the Allies made a final decision about the ownership of former Nazi organizations, the British assumed custodial control and took over the administration of the factory. Economist Leslie E. D. Barber of the Property Control Branch of the Finance Division in Berlin was responsible for financial and proprietary matters; in December

1945, the division dispatched its representative Alisdair McInnes to the plant. In January 1946, Colonel Charles Radclyffe, the chief of the Mechanical Engineering Branch of the Industry Division in the headquarters for the British zone in Minden, took over the leadership of technological concerns. The British provincial headquarters in Hanover entrusted the 29-year-old technician and businessman Major Ivan Hirst with the administration of the company. As the Deputy Commander of the "22nd Advanced Base Workshop" of the Royal Electrical and Mechanical Engineers (REME), Hirst had previously directed the construction of the central tank repair shop in Brussels, acquiring practical experience in dealing with local staff and with shortages in personnel and material supplies. Hirst assumed his post at the Volkswagen plant at the beginning of August 1945. In January 1946, the Senior Resident Officer at Works was subordinated to the Trade and Industry Division in Minden, which had taken over the management of the so-called "Wolfsburg Motor Works" from the British provincial administration.[27]




Leslie Barber, Charles Radclyffe, Ivan Hirst, Richard Berryman, Hermann Münch (from left to right)

Assisting Hirst were Control Officer Richard Berryman, who was in charge of production issues, and Karl Schmücker, a civilian appointed by the Allied Control Commission. Berryman had experience in automobile manufacturing, having previously worked for General Motors, and Schmücker, who had spent four years becoming proficient in English as a prisoner-of-war under the English in World War I, acted as a translator and liaison between the German factory management and the British officers. As business processes grew increasingly complex, a governing committee was needed, so Hirst and Barber agreed to create a sort of control board. The so-called Board of Control, with representation for all of the departments of the British Military Government involved in administering the Volkswagen plant, held its first meeting on January 21, 1946. As a rule, it met every month to deliberate basic questions of the company. This board's importance for the Volkswagen plant can hardly be overstated because it made it possible for ideas about upcoming issues to be exchanged quickly and directly without the obstruction of bothersome bureaucratic detours. Colonel Charles Radclyffe and Leslie Barber traded off the chairmanship of the Board of Control, and in 1948, Alexander Goff assumed this role as the Senior Property Control Officer. At the end of February 1946, the Property Control Branch appointed a new chief custodian for the plant – industrial lawyer Dr. Hermann Münch, who seemed a suitable choice because of the oppositional stance he had taken towards the Nazi regime and the contacts he had made in the Czech resistance movement.[28]

The British era at the Volkswagen plant began with the arrival of REME units in June 1945. On the orders of Colonel Michael McEvoy of the REME headquarters in Bad Oeynhausen, the Royal Engineers constructed a large workshop with an adjoining storage space for spare parts in the former arms factory, where about 8 percent of the German staff was employed in October 1945. This workshop was used to repair British army vehicles and refurbish engines, but also to make Wehrmacht trucks functional for German transport companies.[29] In June 1945, the REME officers took stock of the war damage, production possibilities, and the stored equipment of the factory. At first glance, it seemed that the Allied air raids had done considerable damage to the factory buildings, but the report ordered by the management presented a more promising picture. The bombing had not appreciably impacted the technological equipment of the factory – and of the four factory halls, only Hall 3 was largely destroyed. A total of 20 percent of the factory buildings were unusable for production and a further 14 percent were damaged. The machinery that the Nazis had stored offsite in response to Allied air raids was intact, for the most part. Only 8 percent of the equipment was lost and 11 percent had reparable damage. Consequently, on June 23, 1945, the REME officers, in discussion with the factory management, were able to draw up production plans.[30]

From the available materials, about 500 jeeps could be manufactured. 86 vehicles of this type stood ready for delivery but without tires and hoses. The Royal Engineers decided to build 30 more jeeps because the bodies were already almost finished. After that, production was supposed to shift to half-ton utility trucks. The management suggested delivering 250 of them each month in July and August 1945, which amounted to producing ten trucks a day, and planned to produce a suitable trailer and a "road tractor" later on. As a result, the construction office got to work developing a towing vehicle from the chassis of the jeep. Because food was scarce, the British took interest in Ferdinand Porsche's Volkspflug (People's Plough). 50 prototypes had been built from this model during the war. However, even though the factory management believed that the Volkspflug had been tested on "all kinds of soil in Germany" and was "absolutely ready for mass production," this project could scarcely be pursued because an Italian company in Brescia manufactured the parts and all the design drawings were at the Porsche Company in Stuttgart.[31]

The production plan announced to department heads at the beginning of July 1945 consisted of repairing English military vehicles and engines as well as manufacturing jeeps of Type 82, utility and mail trucks, tractors of Type 113, and truck trailers.[32] But these manufacturing projects were not an option for carrying the company forward into the future; rather, they constituted a temporary measure, as the results of the Potsdam Conference at the beginning of August 1945 revealed. The policy toward Germany that the victorious powers (the U.S., Great Britain, and the Soviet Union) decided upon there aimed, above all, to prevent Germany from ever engaging in a war of aggression again. Demilitarization, denazification, decentralization, and democratization were the key guiding principles of the Allied occupation policy; these principles gave the highest priority to breaking up the German armament industry and provided for the dismantling of factories to drastically reduce the country's industrial capacities.[33] This also applied to the Volkswagen factory because it had not contributed to the German economy during peacetime. Even the British Military Government, at first, fully expected the CCG to utilize the plant temporarily for repair and then, after a transitional period, to clear it for dismantling.[34]

The Main Features of British Occupation Policy

Nevertheless, it was a stroke of good luck that the custodianship of the company lay in British hands. British policy toward Germany responded pragmatically to changing political circumstances, although it adhered to certain premises and was shaped by contradictory aims.[35] To be sure, military security was the top priority in political-strategic discussions and in war cabinet decisions at all times, which is why disarmament and a reduction in the size of the German empire comprised the main emphases of early planning for Germany.[36] However, weakening Germany too much would contradict the Allies' own interest in rehabilitating Europe's economy, for which Germany's industrial potential was urgently needed.[37] Even before the end of the war, it was apparent that drastically downsizing Germany's industrial resources and reducing its heavy industry would take an economic toll on the Empire, which was on the brink of economic collapse. Instead, the British economy, weakened by the world economic crisis and the war, needed relatively stable economic conditions in the neighboring country for two reasons: Only if Germany produced enough for export could the costs for ensuring the survival of the population in the British zone be reduced. Moreover, the reconstruction of the German economy, in the long run, opened the possibility of Britain selling its goods in the German market.[38]

This conflict of aims was exacerbated when the Allies failed to establish centralized administrations for the zones, which were then divided first into autonomous economic and then political occupied zones. This raised the costs of managing the British zone, which was overflowing with refugees; food imports soon comprised a large part of the occupation costs.[39]

Consequently, in the disagreement concerning the future industrial basis of Germany, from which the amount of the reparations to be paid could be determined as a sort of remainder, the British advocated maintaining German industry at a considerably higher level. They rejected Occupation Directive JCS 1067, which was shaped by the rigid German plan of U.S. Secretary of the Treasury Henry Morgenthau. Intended as a temporary operating procedure for the commanding officers of the American occupation troops, this directive provided for a drastic reduction in the industrial capacities of Germany. It also urged the military to forego taking any steps toward reconstructing the economy that went beyond ensuring minimum provisions for the population. The British, by contrast, were prepared to promote industrial sectors that would be important for the peacetime economy more extensively so as not to endanger the reconstruction of Western Europe.[40] This engendered the directive for handling German industry that the Economic and Industrial Planning staff adopted in July 1945, although it never went into effect because of the approaching Potsdam Agreements. This directive did not follow the spirit of the Morgenthau Plan; on the contrary, it allowed the Military Government to decide for itself which economic measures to regard as essential, thus providing decision-makers with a lot of latitude. In practice, this resulted in "constructive pragmatism" during the occupation.[41]

What could be more logical than satisfying the occupying power's tremendous transportation needs by utilizing the Volkswagen production process already in operation, particularly since one clause in the Potsdam Agreement made this possibility legal? The course of the war had drawn the Allies from Normandy to Germany, causing a great deal of wear and tear to military vehicles. Replacements from the home country would not be coming in the foreseeable future. The British automotive industry would not be able to produce a new two-seater all-terrain vehicle until 1947, and the Austin model used during the war was prone to breakdowns. For a short time, the British kept their heads above water by seizing German civilian vehicles, although this did not even begin to meet their growing mobility needs. Rapidly restarting Volkswagen production offered a solution to these transportation miseries.[42]

REME Workshop in the Basement of Hall 1

The Production Order that Saved Volkswagen

One of the most enthusiastic advocates of this solution was Colonel Michael McEvoy because he, as the man in charge of the network of REME repair shops in the British zone, was well aware of the urgent need for additional transportation capacities. Moreover, the automotive engineer had seen the Volkswagen at the International Automobile Exhibition in Berlin at the start of 1939 and remembered it with admiration. McEvoy probably instructed the REME officers at the Volkswagen plant in late July 1945 to discuss a possible project with the management; it involved producing 20,000 Volkswagens for the British Military Government and German offices.[43] According to the plans, production was to begin in September 1945 with 500 vehicles, and, from January to September, was to reach 2,000 vehicles a month. REME had been instructed to prepare a report by August 6, 1945, that would provide information about material and personnel needs, as well as about urgently needed supplies. In addition, it was to make concrete proposals for carrying out this plan. Dynamic support for this project came from Hirst, who advocated the production of the Beetle just as actively as factory manager Brörmann. Hirst did not try to persuade people with words but, in accordance with McEvoy's wishes, he had a Beetle that was standing around the factory grounds painted khaki colors and sent it to the headquarters in Bad Oeynhausen for demonstration purposes. There, McEvoy presented the car, and the military agency told Hirst to proceed with preparations for serial production. The decision was made even easier by the fact that the costs for the Volkswagen production would be met by Germany's occupation payments and would not strain the British national budget.[44]

Already on August 10, 1945, the Beetle stood on the list of the Volkswagen plant's current projects, even before the Military Government in Hanover issued the official order. This order demanded the delivery of 20,000 Volkswagens, 500 special vehicles with trailers for the postal service, as well as 200 trailers for Army needs, to the Allies by July 1946.[45] The management was well aware of how much this order meant for the factory. In a memo, Brörmann called upon all staff "to justify the confidence which the British Mil. Gov. places in our factory," concluding with this challenge: "We are far ahead of other firms in the British zone. It is up to us to keep the lead."[46] In early September 1945, Hirst informed the management of a new program that would produce 4,000 vehicles a month.[47] A few days later, the Military Government declared this program invalid because preparations for the start of production were not proceeding fast enough. Beetle manufacturing was now to begin with 1,000 cars in November 1945 and increase to 4,000 a month starting in January 1946.[48]

The Ruins of Hall 3

On the one hand, the rapidly shifting instructions reflected how difficult it was to assess circumstances properly in the immediate postwar period. On the other hand, it was apparent that the British, at first, overestimated the plant's production possibilities and underestimated the consequences of the economy of scarcity within which they had to operate. The expectation that the plant could produce 4,000 vehicles a month derived from the large capacities of the machines and the assembly lines, but stable conditions were required for this number to be reached – that is, a continuous supply of materials and parts manufactured elsewhere, a sufficient number of unskilled and qualified workers, as well as a normal supply of provisions. But the Volkswagen plant in the fall of 1945 was miles away from achieving such conditions. The production goal, finally adjusted downward, was to manufacture 1,000 Volkswagens a month for the Allies – and even this figure, as time would tell, could not be consistently achieved.

The British Military Government's decision to address its transportation needs by manufacturing the Beetle was in no way a foregone conclusion. The assembly fixtures, machines, and tools were set up for making the Beetle, which was a suitable means of transportation. But the Allies' plans to dismantle German industry as articulated at the Potsdam Conference provided substantial grounds not to use the former arms factory for the production of military vehicles. Manufacturing the Beetle, by contrast, offered the better argument – in the controversial discussions about the reparations to be paid by Germany – for postponing the dismantling of the Volkswagen plant; this also brought time for corrective interventions in the Four Power negotiations concerning the future level of German industry. In this regard, the military administration's policy accorded with the London government's approach for determining the level of German industry.[49]

It also bears considering that, in assuming responsibility for the Volkswagen company, the British were in charge of the largest employer in a structurally weak region, which constituted the only source of livelihood for the resident population. Consequently, the officers tasked with managing the plant bore a particular responsibility to the workers. They did not limit themselves, as their function as custodians would suggest, to maintaining the status quo. Rather, the British aimed to convert the former arms factory for the serial production of civilian vehicles. After all, one thing was certain: the continued existence of the company entrusted to their care, and with it, the livelihood of the local population, could only be secured if the company manufactured a technologically modern and commercially viable product for peacetime.[50]

The Volkswagen factory became an administered enterprise managed by the British – with all the advantages that this circumstance entailed. The Military Government authorized the necessary credits for the start-up of production and used its authority to overcome some of the hurdles that the "command economy" presented. Because the Volkswagen plant was manufacturing for the Allies, it got priority in the delivery of scarce raw materials that were distributed according to a quota system, and this loosened the shackles of government rationing. Steel, an indispensable material in automobile manufacturing, could only be obtained in exchange for "iron vouchers," which Hirst picked up once a month at the headquarters in Minden. Thus, the plant lived "from hand to mouth" but did not starve like other companies.[51]

There were other advantages to being an administered enterprise that were evident in the firm itself. Material and spare parts depots were well filled and did not begin to run out until July 1946. With its own power plant, the factory was less susceptible to the frequent power outages of the postwar period, as long as there was enough coal.[52] But as this was not always the case, the power plant manager

Manual Operation in the Press Shop

sought – albeit in vain – to get the turbines connected to the public network in May 1945. Finally, the Military Government lent a hand and arranged for the Brunswick Electric Company to lay a high voltage line. This allowed the power plant to be used more efficiently and insured a more regular supply of fuel, even though the considerable overcapacities prevented factory power from being truly economical.[53] In addition, the Volkswagen factory had its own press shop – it had, after all, begun to manufacture the auto body for the jeep after the Ambi-Budd plants had been destroyed in the late summer of 1944.[54]

The Danger of Dismantling and Democratization

The Damocles' Sword of dismantling swung over all these efforts to get Volkswagen production back in gear until September 1946. But the removal of the plant's machinery would not have been in the interest of the Military Government. Nor would it have fit with the economic goals of Britain's policy toward Germany, which, though rigid, was flexibly applied. Consequently, London negotiators tried to slow the pace of dismantling and to keep open the option of increasing the level of German industry in the future – even though the dismal economic situation dramatically reduced the prospect that German goods would be able to be exported to reduce costs. As a result, in the battle to determine the future level of German in-

dustry, the lines were not drawn along the ideological East-West border but straight through the political camps, with Great Britain on the one side and the U.S., France, and the U.S.S.R. on the other. Clearly, these different positions clashed in meetings led by the Allied Control Council to determine the German steel quota and the concomitant level of industry. Yet even though the British point of view did not prevail, their negotiation tactics helped them, in determining the German steel basis, to have the level of capacities to be maintained set higher than the allowed output. But most decisive for the British acceptance of the German industrial plan were the concessions that the Americans and Soviets made for other branches of industry; these stipulated capacities that sometimes exceeded British suggestions. After all, the British anticipated that the purposefully fostered discrepancy between the capacity volume of sectors that utilized steel and the relatively low level of iron and steel-producing industry would, more or less, automatically lead to a revision of the steel quota.[55]

Admittedly, the figures in the Level of Industry Plan published by the Allied Control Council on March 26, 1946, told a different story: this plan set Germany's economic capacity and production at about half the level of 1938 and limited annual automobile production in the British zone to 20,000 cars and 21,000 trucks. As the British had determined that the Ford factory in Cologne was sufficient for civilian automobile manufacturing, the Volkswagen plant remained on the dismantling list.[56]

The driving force behind the dismantling plans was the British automotive industry, which wanted to rid itself of an unwelcome competitor. Experts of the Society of Motor Manufacturers and Trade (SMMT), however, came to different conclusions concerning the commercial possibilities for utilizing the Volkswagen. SMMT President Sir William Rootes regarded the serial production of the Beetle as a completely uneconomical enterprise, whereas the officers of the Mechanical Engineering Branch, who were familiar with factory operations, quickly recognized the enormous potential of the car. Yet British manufacturers were not primarily interested in the Volkswagen, which, in its state of development at that time, ranked behind their own best models. So they intended to pick the cherries out of the modern production equipment of the Volkswagen factory with the support of the Ministry of Trade and Supply. However, several forces opposed these plans of the British automotive industry: the Foreign Ministry; the Ministry of the Treasury, which was interested in income from Volkswagen exports; and the Control Commission for Germany, which underscored its responsibility for Germany and had no inclination to support the aims of the British automotive industry.[57]

Moreover, dismantling the Volkswagen factory would have been difficult to justify in light of Britain's "democracy-building" principle in its policy toward Germany. The central tenets of British occupation policy included democratizing German society and integrating Germany into the West; British efforts to achieve these aims

ranged from influencing media, education, and cultural policies to actively forging the constitutions of communities and states. From the beginning, it was clear that democratizing people's attitudes would have to go hand in hand with building political and administrative structures anew so that a stable democracy committed to human rights could be established on German soil. This was the lesson of Weimar.[58] It found its expression in the concept of "re-education," as well as in the office of the Education Adviser held by Robert Birley, who supported the military governor of the British zone and was responsible for "educational reconstruction" from April 1947.[59] In contrast to the Americans, who had an idealistic notion of democratization, the British understood "democracy-building" as a drawn-out process. The Military Government was, therefore, prepared to invest considerable resources and time to bringing Germans to the principles of democracy and a constitutional state, as well as to constructing democratic structures from the ground up.[60]

The management of the Volkswagen plant provided a good opportunity for putting these ideas into practice. The officers in charge quickly recognized that they could use the factory not just to build cars but also to build democracy. Hirst took on the task of democratizing work relations at the factory, which had been shaped by the Nazi dictatorship.[61] In addition, in the spring of 1946, the idea of not dismantling the factory in order to make a fresh democratic start in Wolfsburg grew increasingly important. In light of the rapid administrative and political consolidation of the Soviet occupation zone, which the Soviets effected by shutting out all oppositional forces, the Labour government under Prime Minister Clement Attlee strove to better coordinate British and American policy toward Germany. This aimed to prevent the rise of "communism on the Rhine" and to restrict Soviet expansion in Europe. The emerging containment policy was based on advancing the economic reconstruction of Germany because both the British and Americans believed that hunger and poverty would play into the communists' hand.[62]

Consequently, the custodians of the Volkswagen plant regarded an economically viable automotive company as the best means for giving the Wolfsburg population prospects for the future, and, with that, for establishing the material bases for realizing British notions of democratization. In a city council meeting in March 1946, McNeal vehemently countered the growing rumors that the Volkswagen plant was about to be dismantled with a clarifying statement: "If this factory is a success then there is every possibility that it will be kept going forever, either as a factory for building cars or as an industrial estate. If, however, it becomes too difficult to run … from the financial point of view … then nobody can blame the British Government if they decide to close down the factory. Military Government is here to help Germany and not to plunder, and to show Germany how to become democratic, and to administer justice."[63]

Finally, in the summer of 1946, an advance decision on the dismantling of the plant was made as negotiations between the British and the Americans concerning the fusion of their occupation zones were getting underway. In the meantime, the U.S. Military Government had also recognized the urgent necessity of rapidly rebuilding Germany's economy and had ordered a stop to dismantling in its own zone. Consequently, in both the American and British zones, the groundwork for economic reconstruction had been laid.[64] In September 1946, the British Military Government excepted the Volkswagen plant from reparations for four years. After the Bizone had been established, the Bipartite Control revised the plan for the level of industry in March 1947, raising the number of personal vehicles that could be produced in Germany to 160,000.[65] Thus, the survival of the company on the Mittelland Canal was assured.

2.2 The Improvised Fresh Start

"In the first period, no sheet steel was available that would have been large enough for the car top. Smaller sheets were spot-welded, but the welded joint was not stable enough. I suggested welding butt joints, but I was told: We don't have the necessary machine for that, to which I answered: Make one! That was done."[66] Anecdotes like this one recalled by Hirst are numerous; they demonstrate better than any production statistics how much improvisation was necessary to get the serial production of the Volkswagen Beetle off the ground. Having switched over to arms manufacturing in 1939/40, the company had only produced 630 vehicles of the model referred to internally as Type 11 during the war before the summer of 1944, when heavy air raids prompted the relocation of the machinery and ended production. Except for the production of the jeep and amphibious vehicles, the plant management had relocated the manufacture of war-related products to the underground facilities at Tiercelet, Dernau, and Eschershausen or to factory branches in Neudek and Schönebeck. But even the manufacture of parts had largely been relocated to a variety of smaller temporary workshops in the surrounding area so that material deliveries in the last months of the war were made either by trucks or by transportation crews with backpacks. The factory constructed on the Ford model had fallen back "more or less to the level of preindustrial, manual methods of production."[67] Thus, the assembly for serial production pushed by the British was like a new beginning for the Volkswagen factory, which, given the adverse conditions of the immediate postwar period, proved to be a difficult task. The individual departments had to be set up for the production of the Beetle, new machines and tools had to made, and equipment and supplies had to be brought back from the various branches to the main factory.

The relocation of factory equipment in the surrounding area gave the Volkswagen plant a good starting position. The loss of technological equipment caused by bombing was quite minimal, so that it was possible to return most of it on the orders of the British, even though there were some significant delays. Most of the mechanical operations that had been relocated were intact and ready for production: the assembly for making automobile parts, crankcases and transmission housings, cylinder heads and camshafts could be found in Soltau, whereas the manufacture of shift forks and brake pedals, as well as all gear pinions for engines, transmissions and rear-axle drive trains were in Neindorf. The production equipment for pinions, ring gears, brake drums, rear spring bars, flywheels, and cylinders was in Fallersleben; that for carrier levers, steering knuckles, and steering gear housings was in Gifhorn; and the machines for making tubes were in Lüneburg.[68]

Nonetheless, about one quarter of the relocated equipment went missing: of the 2,776 machines counted before the air raids in the summer of 1944, 2,063 were available after the war's end. However, the intensive wartime use, as well as the relocation and return of the equipment, left most of it in poor condition and in need of maintenance and repair. For example, the machines that had been taken to Minette Corporation in Lothringen had to be written off – a considerable loss because these were exclusively machine tools that were urgently needed for reconstructing the factory and preparing for serial production.[69] What made the situation even worse was that the machine tool plants were still waiting for production authorization at the start of 1946. But even after operations had started up again, the procurement of tools for the Volkswagen plant continued to be a cardinal problem.[70] In addition, the tool storage site was in a catastrophic state. Information about tool requisitions were not available because the files had been burned, and the tools used by the workers, some of which were lying around the factory, were not inventoried, so it was even easier for them to get lost.[71]

For British production plans to be realized, the relocated equipment needed to be brought back to the "main factory" as quickly as possible. Thus, the Military Government quickly took the initiative, presenting guidelines on June 18, 1945, to protect such equipment from further plunder and especially from seizure. British and American troops were informed that the equipment was Allied property and could only be removed with the authorization of the British factory management. At the same time, the British commanded people to immediately take up contact with the mayors of relocation sites and to secure stolen materials. The military agency threatened severe penalties for those who failed to return them.[72] By October 1945, the return of the machines that had been placed in Neindorf and Lüneburg had been completed. But the directive

Clean Up on Temporary Rails

came too late for the materials relocated to Waggum in the county of Brunswick. On the order of American troops, the machines, tools, and materials that had been stored in the five airplane hangars had been "carried to the bomb craters and rolled into them."[73] A much larger lot of machines – and one that was more important for the production process – was located in Eschershausen, where an armament complex had been established in the asphalt mines in 1944/45. On August 9, 1945, the British Military Government of the Hanover province ordered the release of the machines, tools, and materials that the Volkswagen plant had relocated there. A factory representative brought a written order explaining this to the city commander in charge who was supposed to effect the return of objects that different firms had taken away. In addition, the mayor of Escherhausen had sold a large number of objects and was ordered to rescind the illegal sales.[74] Although the lot of machines had been retrieved by the end of the year, the recovery of the stolen factory materials took over a year. Thus, in July 1946, among the items handed over to the Volkswagen factory were 8 lathes, 7 drills, 36 electric motors, a 12-ton hoist, 4,500 meters of steel and brake cables, and 3 typewriters. The pending investigations – for example, concerning the location of 6 electric motors and a lathe that were assumed to be in the municipalities of Lenne, Holzen, and Lüthorst – were supposed to be completed by the end of the month.[75]

In any case, the Volkswagen plant lacked the space for a rapid return of all the machines in the first months under British control. At least one-third of the manufacturing area had been destroyed or damaged by bombing so that most of the available workforce and energy went into dealing with the most serious war damage. Debris had to be removed, bomb craters had to be filled, and parts of buildings had to be provisionally restored for the return of the machines.[76] There was not enough material to repair factory operations; moreover, the British prohibited such repair because the factory was on the dismantling list. Only in 1947 did the Board of Control grant permission for the factory to be systematically rebuilt – at a time when, due to the escalating material crisis, construction materials could hardly be obtained.[77] For the development of efficient serial production, this had grievous consequences. The relocation of sections of the plant and their transfer to the lower level had torn the ordered production line apart; reconstructing and reordering it was gravely hampered by the destruction in the factory halls and could only be completed, more or less, in 1949.

Developing a Supplier Network

In addition to factory equipment recovery, the reestablishment of a supplier network was one of the most urgent tasks. The division of Germany into zones had cut through vital connections in the supply industry; for example, the supply of light bulbs was interrupted because most manufacturers were located in the Soviet occupation zone.[78] But deliveries from the American zone also encountered difficulties. There, in August 1945, potential suppliers for Volkswagen had not yet received permission to work, or had received only restricted permission; the bureaucratic practices of the American regulatory authority proved to be a stumbling block, complicating the movement of goods. Every contract had to be approved by the Military Government in Schweinfurt. Deliveries into the British sector required the agreement of the headquarters in Frankfurt. An internal report on the status of the supply industry in the American zone concluded that the reconstruction and the transportation infrastructure lagged behind those of the British zone, significantly hampering economic life. The writer thus suggested that contracts be relocated to the British zone, where "the economy receives decisively more support for the fulfillment of its tasks."[79]

In August 1945, the Volkswagen plant was negotiating with the Bosch Company concerning the suggestion to relocate the manufacture of alternators, starters, and spark plugs to the British zone. The Bosch management rejected the idea, however, as the company did not want to give up the advantages of its centralized production in Württemberg. Nonetheless, the company did express its willingness to continually supply the entire electrical apparatus from February 1946 on. Yet the rationing system rapidly forced Bosch to break this promise, causing Bosch's manager Honold to explain the situation to the Volkswagen management in March 1946. As he pointed out, up to that point, Bosch had received "not a single kilogram" of the iron rations that the British Military Government had distributed to Württemberg.[80] The American occupation forces used 80 percent of the already small quantity of 1,000 tons. Agricultural and transportation concerns got the rest, and so industry wound up with nothing. As a result, Bosch decided to transfer some contracts to the British zone and to fulfill them through its affiliate in Hildesheim, the Trillke-Werke GmbH.[81] Volkswagen management promised to acquire the necessary iron vouchers and to order materials that were very hard to obtain itself, such as dynamo sheets, steel strips, and tubes.

Similar problems occurred with the supplier in Schweinfurt, from which the Volkswagen plant had previously acquired anti-friction bearings. Company representatives thus talked with Dürkopp-Werke located in Bielefeld as this firm had expressed its willingness to manufacture the ball bearings. However, it needed six months lead time to procure the machines for serial production. In the meantime, it committed to beginning delivery in six weeks and custom-produced the bearings to eliminate the threat of shortages. Volkswagen agreed to this plan but expressed concern that the bearings might not be adequate for the same loads.[82] These doubts turned out to be justified. But this was one of many compromises that the company had to accept in order to begin serial production as quickly as possible.

Another compromise concerned the steering gear housing cover, which had to be manufactured by the presses rather than by light metal casting because the latter was unavailable. Yet this compromised the safety of the steering. In early January 1946, the British ordered that the gap between the steering gear housing and the steering arm be eliminated by filling it with discs, effective immediately; this would prevent the steering shaft from shifting in an axial direction. No vehicle was allowed to leave the factory without these discs.[83] It was primarily Hirst's doing that the Volkswagen factory was able to manufacture the steering gear housing and, even more importantly, the engine case and transmission housing itself from 1946 after the supplier company had closed. With his help, the factory succeeded in saving the casting molds in the empty foundry building, which was expanded into a light metal foundry in 1946 when five pre-melting furnaces and 20 holding furnaces were put into operation.[84]

In-house Manufacturing in the Light Metal Foundry

To some extent, the "satellite factory" in Brunswick compensated for the severe restrictions in manufacturing of the supply industry, as well as for the reduced tool-making capacities. Built in 1938 as a training center for the Volkswagen factory and as a supplier of jigs and tools, this branch was also subject to British rule beginning in June 1945. Manufacturing for the Wolfsburg plant started up there again slowly, at first only utilizing a small portion of its capacity, but then the production order for 20,000 Beetles set this site on a new course as well.[85] In early September 1945, Brörmann informed Paul Kurz, the manager of the Brunswick plant, of the British custodians' plans to begin serial production as soon as possible. The satellite plant was obliged, Brörmann said, to make the production facilities for fuel pumps, carburetors, clutches, and shock absorbers "by putting all other work on hold" and, at the same time, to continue producing the equipment needed by the Volkswagen factory.[86]

A few days later, the British took the first steps to bridge the distance between the two factories by improving communications, making rapid response to Wolfsburg's requests possible. At the local long-distance office, Hirst applied for a direct line between the Wolfsburg and Brunswick factories because the satellite plant had "been detailed to participate in fulfilling our orders for Mil.Gov. The lack of a direct line has already caused delays in production

The Satellite Factory in Brunswick

and can no longer be accounted for."[87] When the serial production of the Beetle began, the satellite became a fully integrated branch of the Volkswagen factory and ceased to be an independent entity. For accounting purposes, beginning on January 1, 1946, it was assigned to the "Block Volkswagenwerk."[88]

Above all, the largely intact tool-making equipment in Brunswick greatly facilitated the preparations for serial production by manufacturing jigs, stamping and cutting tools, devices and welding machines. In addition, the satellite factory produced various automobile parts, although the manufacture of carburetors previously supplied by the Solex Company proved to be problematic.[89] Consequently, Hirst and factory manager Brörmann together took a carburetor apart and sorted the parts into two stacks. They tasked the light metal foundry with making the castings, and they commissioned several photo companies in Brunswick to manufacture the small parts.[90] This was not the only realm in which the Volkswagen factory was forced to resort to manufacturing its own parts and improvising; it was often unable to procure some important auto parts at all, and many others only with difficulty, in spite of British support.

Staff Development and Denazification

As early as July 1945, when the Volkswagen factory began production for the British Military Government, it became evident that it would also be difficult to find the workers necessary for serial production. At that time, there were 1,259 workers on staff. If one subtracts the 244 who worked in the power plant and the 345 who worked in the company's various enterprises, then the number of workers for vehicle production was merely 670. For rough and final assembly, there were 29 workers; for the manufacture of front and rear axles, there were 46; 16 people worked on the torso of toolmaking.[91] At the end of July, the REME unit stationed at the Volkswagen factory asked British headquarters whether it could arrange for the transfer of 1,000 prisoners of war from the Munster compound, which reportedly housed several thousand trained and skilled workers.[92]

By August 1945, the British Military Government had managed to raise the number of workers to almost 3,000 by recruiting across the entire British zone. Yet, as this small success was not sufficient to insure the start-up of serial production, the Military Government did not shy away from forced labor. At the end of November 1945, the provincial headquarters in Hanover ordered the Wolfsburg employment office "to direct all suitable unemployed persons already living in Wolfsburg – Fallersleben and district, to the works." In cooperation with the local police, "house-to-house checks" were to be conducted in order to induce unregistered people to work at the Volkswagen plant; for unskilled activities, the British agency also found "able-bodied women" to be acceptable.[93] Moreover, the British Military Government had already mandated in September that workers could henceforth only be dismissed with the approval of the factory commander and that job changes, which also had to be authorized, had to be applied for at least ten days in advance and list reasons for the change.[94]

Given the shortage of workers, the planned start-up of production for the Beetle also determined British denazification policy for this phase. This was subordinate to the central security-policy occupation goal of preventing renewed militaristic aggression on Germany's part over the long term. Early British plans for Germany, therefore, entailed wide-reaching plans for punishing war criminals and a comprehensive denazification policy.[95] Implementing this policy, however, proved challenging because Great Britain had been assigned the occupation zone that was probably the most difficult to manage – with the severely damaged Ruhrgebiet as the core of German industry. As a result, the Military Government in its occupation practice was quickly confronted with a conflict of interests: if the security interests of Great Britain demanded a consistent denazification policy, then its own economic problems and the wretched circumstances of the British zone made reestablishing the functionality of the economy and the government of prime importance.[96]

Hirst, too, was faced with this dilemma as it became apparent that the deep personnel and management shortages threatened to derail British production plans. Making the situation even worse was the fact that the Anti-Hitler Coalition, on account of diverging political ideas and interests, had not managed to translate its principles of occupation policy into binding interzonal guidelines, nor to develop common regulations for implementing denazification. But even the British Germany Handbook, which served the occupation agencies in the first postwar months as a programmatic set of guidelines, failed to provide clear instructions.[97] On the contrary, a confusion of directives and instructions made executing denazification measures on the ground even more difficult.[98]

Hirst took pains to accomplish the denazification mandated by the British Military Government in the fall of 1945 as quickly and quietly as possible. His primary interest was in developing the Beetle production line. For that, a functional system of management had to be put into place swiftly, and the demoralizing effect on the staff had to be minimized. The British officer used his position to accelerate the process. Bypassing the local agency at Gifhorn, he brought the filled-out questionnaires directly to the headquarters in Lüneburg, where the Public Safety Branch processed them. In January 1946, Hirst declared that denazification had largely been completed. The first denazification wave in the Volkswagen factory, which was to be followed by another in June 1946, barely touched the staff; it only covered the leadership team, and even for this, there were strict limits to changes in personnel.[99]

Starting Up Civil-sector Production

Aside from the lack of workers, the general scarcity of materials also delayed the start of serial production. There was a severe shortage of batteries, tires, and hoses, which led to these materials being rationed from September 1, 1945. This, in turn, made it necessary to acquire them through a complicated and time-consuming bureaucratic procedure. Thenceforth, the Subcommittee Vehicle Production of the Economic Planning Committee for the British zone allocated them, whereas the agricultural office carried out the individual releases. One main distributor was appointed in each province, and one authorized trader was appointed in each administrative district. The Volkswagen factory had to submit requests for tires, hoses, and batteries for its own transport vehicles to the district economic council, which passed them on, if approved to the agricultural office for final authorization. This office then sent a notice indicating the authorized quantity to the district economic council, which would forward it to the applicant as well as to the appropriate main distributor, who would send the material to the authorized trader.[100] It was obvious that this distribution system would delay the acquisition of material supplies.

Manufacturing the Beetle, 1946

While the well-filled material depots and the return of relocated spare parts managed to remediate the worst shortages, the British succeeded in raising the number of workers to 6,033 by the end of the year. Moreover, the custodians took organizational measures to keep REME's demands from interfering with the development of serial production. On the custodians' initiative, a German repair manager was appointed who would act as a liaison for the management to coordinate matters in the REME repair shop. This new structure of internal responsibilities was expected to enable factory and production managers to "devote themselves fully and completely to the production of new vehicles."[101]

Despite the adverse conditions resulting from staff and material shortages, on the one hand, and undelivered orders and missing machines, on the other, serial production of the Volkswagen Beetle was launched on December 27, 1945 – almost two months later and with a smaller number of units than originally planned. Until then, the Volkswagen plant had primarily been building jeeps for the British Military Government.[102] The first 55 Beetles that rolled off the assembly line between Christmas and New Year's Day bore signs of the compromises and improvisations required to make serial production possible. For example, the higher jeep chassis that were still available were used on the so-called commander car, known internally as Type 51, which distinguished the Volkswagen from the competition.[103] The competitiveness of the product and the company did not yet play a role, but this would soon change.

3. The Transformation into a Commercial Enterprise

The development and start-up of serial production were oriented entirely toward the needs of the British Military Government. Product quality and factory efficiency and profitability were, at first, only secondary factors as the efforts to get serial production up and running took priority. After the production level stabilized at 1,000 vehicles a month, the demands of the custodians rose in the spring of 1946 as they began to set their sights on using the Volkswagen Beetle commercially as an export. From then on, the British persistently pushed for quality improvements, cost reductions, and increased output in order to get the Volkswagen onto the European market, above all to finance food imports with the export revenues. Britain's export plans gave the firm the decisive push for change. They helped the company to achieve a breakthrough in its business rationality and spurred it to transform itself into a commercial enterprise – a transformation the Volkswagen factory essentially completed in 1946/1947. Realigning the production process rendered incoherent by equipment relocations and war damage, rationalizing operating procedures, restructuring the organization, and building up a core workforce were fundamental to this shift.

The transition of the Volkswagen plant to competing in the market took place under the watch and direction of the Board of Control, which began its work in January 1946. In this, it proved highly advantageous that people with know-how about automobile technology were present, and that Radclyffe, who was responsible for technological matters at the Volkswagen factory, had worked in international circles as an automobile expert.[104] The Board made fundamental decisions for the firm, set the production program for the factory in consultation with German factory managers and under consideration of the material and staff shortages, and paid painfully close attention to the fulfillment of the plant's delivery obligations for the British administration. In case of doubt, the mandatory production received priority. Given the increasingly severe shortages in material supplies, this principle engendered conflicts between the Germans and the British in 1947.

Aside from this, the partnership functioned smoothly because the British emphasized cooperation and division of labor, thus taking the logic of plant operations into consideration. For the most part, they gave the German management free reign to restructure the organization and technologies of the plant. In addition, in 1946 the Personnel Department once again took up responsibility for expanding the workforce, which had been temporarily restricted by the requirement that dismissals be authorized. When problems arose, the British custodians were on hand, supporting the development of the company by utilizing possibilities within their reach, such as acquiring needed supplies and workers or improvising.[105]

Above all, Hirst, who was passionate about technology and cars, quickly grew into his role as manager of an automobile company once the production order had been placed; he fulfilled his task with the greatest ambition, carrying out valuable and indispensable work. As the Volkswagen factory began to take shape as a commercial enterprise, the material and personnel shortages foiled all efforts to increase the output. The low capacity utilization decisively determined the profitability of the company. Yet despite all these difficulties, the firm was able to adjust to market conditions.

3.1 Factory Reconstruction and Reorganization

The beginning of serial production of the Beetle marked the start of a process of development that lasted until 1949, in which the enterprise administered by the British was transformed into a competitive automobile company with cost-oriented production and a functional organizational structure. At the beginning of 1946, the Volkswagen plant was a long way from this. Some of the departments had been thrown together in the lower levels of the factory halls, and production was not oriented toward efficiency in its spatial or organizational arrangement. Only when some of the factory halls had been repaired and machines had been returned were conditions ripe for arranging the production apparatus in 1946/47 and newly structuring plant operations with an eye to their efficiency.

Reconstruction of the Mechanical Department

In 1946, about 34,000 m^2 of production space became available when debris was removed from factory halls and buildings were shored up to keep them from collapsing. This space made it possible to reorganize production. 417 machine tools were returned to the Volkswagen plant from the relocated production facilities in Soltau, Gifhorn, and Fallersleben, and the bulk of the machines that had been transferred to the lower level during the war were brought back into the factory halls.[106] These measures especially affected the Mechanical Department located in Hall 4 which made great strides in 1946: For one thing, the manufacture of parts for front axles was brought back from Gifhorn, and the manufacture of crankcases and robots was brought back from Soltau. For another, the departments and assembly lines that had been relocated to the lower level were put back in the factory hall – these included the internal and external grinding shops, the tube-bending shop, and bearing shell processing, as well as the production facilities for valves, connecting rods, and oil coolers. These improvements reconstructed the Mechanical Department to the point that it was able to operate most of its production lines when the supply warehouse ran short in mid-1946. In 1946, the production of the following parts had started up: transmission housings, crankshafts, camshafts, cylinders, cylinder heads, gear wheels, clutch thrust bearings, drive shafts, shift rods, gear shift levers, brake drums, steering arm pullers, steering arms, rear steering-gear housings, rear brace hubs, as well as hand and foot lever mechanisms.[107]

"Mechanische Abteilung"

Despite these advances, the Mechanical Department was a rather sorry sight at the end of 1946. The production line had been badly disrupted by building damage, and now it was a "labyrinth-like structure with a number of courtyards" with provisional walls made out of light metal and cardboard. The connections between the different assembly lines also left a lot to be desired. The parts were delivered directly to the lines, which meant that when the flow of materials was interrupted, the lines stood idle for hours on end. As production delays – due to supply or tool issues or damage to machines and equipment – could hardly be avoided in the Mechanical Department, Streibig, the manager of the "Betriebswirtschaftliche Abteilung" (Administration Department), suggested that a properly calculated material buffer be installed between the Mechanical Department and the assembly lines. All the small and large parts were to be stored and ready in this intermediate unit in their required quantities. For this, the "iron stock" would have to be set at a level high enough to bridge delays in this department.[108]

It was above all in Mechanical Department that the lack of adequate tool-making facilities made itself painfully apparent, especially since special tools and resources were often unobtainable because of the different occupation zones and delivery problems. Numerous tools were not available, grinding took too long, and machinery was delivered too late – problems that were supposed to be solved by strengthening the plant's ability to make its own tools. But the technological equipment needed for this was hard to come by. The management had succeeded in procuring 64 machine tools in the course of the year with the support of the British Military Government, which had subjected all the machine tools in its zone to rationing in its directive of January 6, 1946.[109] Yet this could not close the gaps left from the war any more than when the plant made its own tools at its satellite sites. Moreover, most of the machine tools needed to be repaired or replaced, and only a few skilled workers were able to make such repairs.[110] Consequently, there

were shortages especially in "cutting and grinding tools." Section steel and cutouts could not be obtained as standardized tools, and companies refused to produce them. The waiting period for procuring a "broaching tool," for example, was eight months. In early September 1946, there was a meeting to address these issues. Meanwhile, the situation had grown even worse as most tools could only be acquired through barter or personal connections. General Manager Münch instructed the relevant workers to take stock of what was available and to clarify which tools could be purchased and which could be manufactured in the Volkswagen plant itself.[111]

High Production Costs, Low Productivity

At the end of 1946, the production process was far from being well ordered, and it lacked a steady flow. There was a great deal of improvisation in it, as well as a lack of coordination between the different parts of the process and the various departments. The complicated external development of internal procurement, scheduling, and the management of materials resulted in delays in production. The supervision of changes in construction broke down, and the production documentation, which, for instance, set the cutting speed for specific operations, was often incomplete and inaccurate.[112] Sales manager Leonhard Kemmler brought the poor planning and work preparation, as well as the costs resulting from these inadequacies, to the attention of the British plant management in August 1946. To solve these problems, he suggested that the Planning Department be given a supervisory capacity and that work preparation be organized on the basis of planning documents. In addition, Kemmler assigned the Department of Technological Efficiency, which was to be subordinated to the management of production, to "organize operations with regard to efficiency, as well as to systematically … remove all sources of error."[113]

The difficult conditions for production were reflected in the development of productivity. In March 1946, it took a total of 290 hours to produce a vehicle in the various production departments. By August, the number of hours was reduced to 233, although all manufacturing areas did not achieve equal progress. Production time was reduced in the press shop from 56 to 30 hours, in auto body production from 77 to 45 hours, and in the final assembly from 27 to 18 hours. By contrast, the production time per vehicle increased in the Mechanical Department from 91 to 106 hours and remained the same – 17 hours – in the paint shop.[114]

Finishing Touches on the Final Assembly Line

The low productivity had an effect on the price of the Beetle, which was raised to adjust to the production costs from 4,150 to 5,000 Reichsmark in April 1946. After that, the Board of Control once again demanded that costs be reduced. Yet the analyses undertaken by the factory management did not bring any progress on this issue. On the contrary, overhead costs steadily rose in April, May, and June 1946. As a result, Property Control Officer McInnes appointed an external organizational consultant – a move the management snubbed and probably rightly interpreted as a criticism of its work. Remarking critically on the price increase, Hirst said that the price of the car could "not begin and end with product cost analysis"[115] and that the days when a Volkswagen could be sold for 5,000 Reichsmark were over. As McInnes had announced, the price for the Beetle was reduced in July 1946 to 4,000 Reichsmark. As further calls for price reductions were to be expected, McInnes ordered the factory management to eliminate unnecessary costs and to reduce essential costs "to the bare minimum,"[116] noting that it was in the company's interest for it to be run on a financially healthy and profitable basis. Despite all the management's efforts, however, the price of the Beetle could not be further reduced but instead was raised to 4,250 Reichsmark by agreement of the Board of Control on December 6, 1946. This took the increased cost of materials in the crisis of the winter of 1946/47 into account.[117]

Restructuring the Manufacturing Process

On the one hand, the high production costs stemmed from the poor capacity utilization of the factory, as well as from the pronounced disproportion between productive and non-production activity. On the other hand, they resulted from the still poorly structured manufacturing process, which only began to take on a more efficient shape during the course of 1947. The cleanup of Hall 1 made it possible to increase the size of the REME repair shops, which was accompanied by an expansion in the technological equipment including an engine assembly line, spray booths, conveyor belts, and new testing stations. In Hall 2, the roof, which had been provi-

sionally covered, underwent extensive repairs where the structural steelwork had been damaged and covered with concrete slabs, and a bomb crater in the floor was filled. These repairs made enough space available for the small pressing plant with about sixty presses, the sheet-metal storage, and the cutting room to be moved from the lower level to the factory floor, where they could be arranged for better production flow. The conveyor belt installed in 1947 transported the body shells from the production line to the upgraded paint shop with its improved heating and ventilation. The factory management had ordered a modern cleaning system for the body shells previously cleaned by hand, which went into operation in 1948.[118]

The reconstruction of the toolmaking division began in 1947 when it was relocated from the lower level to the northeast corner of Hall 3. Forty-five new and 62 repaired machine tools from storage completed the technological set-up by mid-year. A paint-storage and paint-mixing room, as well as a storage space for discarded material, were then installed in the cleared space on the lower level.[119]

The most extensive construction and company-structuring measures were taken in Hall 4, where the Mechanical Department, the assembly lines for structural components, as well as final assembly were located. A new roof made it possible to utilize the approximately 1,500 m^2 inner courtyard in the center of the hall. The installation of permanent walls and glass created an additional production area of 1,728 m^2 in the northeast corner, which provided sufficient space for the assembly lines and post-production repair work. With some adjustments to machines and the beginnings of mechanization of internal transportation needs, a methodical production flow was established. In order to bring the mechanically processed components to the assembly lines, a 740-meter collating conveyor was installed. The grinding shop with 52 machines was moved from the lower level to the center of the Mechanical Department, where it was placed in such a way that it could be combined with the output of tools and gauges.

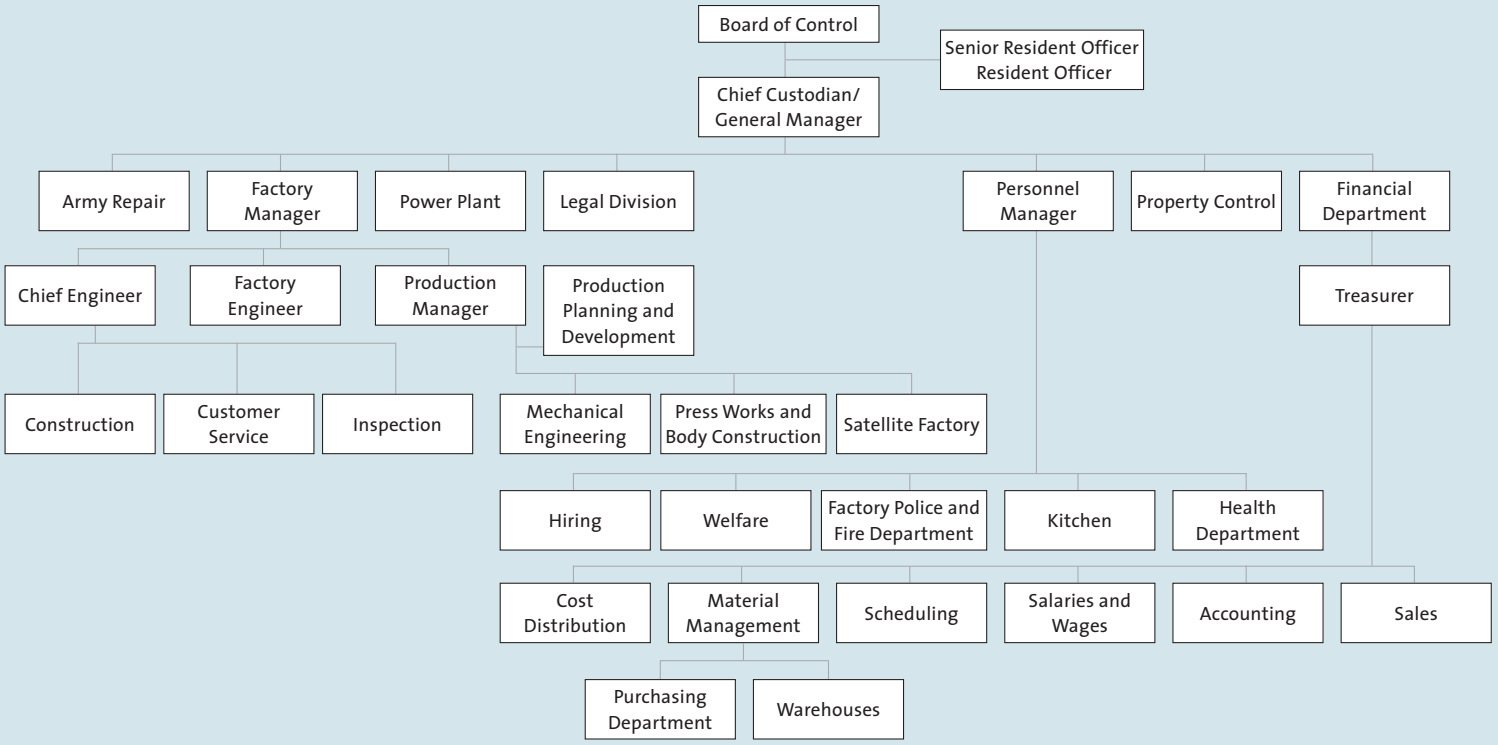
The entire lower level of Hall 4 was expanded in 1947 for storage: by the end of the year, various parts and interim storage facilities had found their way there, along with the storage of incoming goods and their inspection. The relocated interim storage for the Mechanical Department was better connected to production. A conveyor system linked the tire and battery stores to the assembly line, which accelerated internal transportation and material flow.[120] The largely completed rebuilding of the central tool management storage area also saved time. Through arduous detail work, workers had managed to separate useful tools from unuseful ones and to reduce the estimated 10,000 types of tools to 1,400 drawing-based tools and about 1,000 standard tools for machining.[121]

Axle Assembly in a Damaged Hall

At the same time the production process was being restructured, organizational deficits were also being remediated. The centralized production planning for chassis-building and the press shop were split up and relocated nearer to these production areas for better coordination. Incomplete or inaccurate production plans were finished or corrected. In place of one centralized planning commission, scheduling divisions were set up in the departments that made sure that individual deadlines were met over a particular period of time. In order to resolve the perpetual discrepancies in material supply, production planning took over management of materials. In addition, this department took on the task of appropriately scheduling construction changes.[122] The procedure developed for this purpose was set forth in the "Work Guidelines for Construction Changes" transmitted to all those involved in early September 1947.[123]

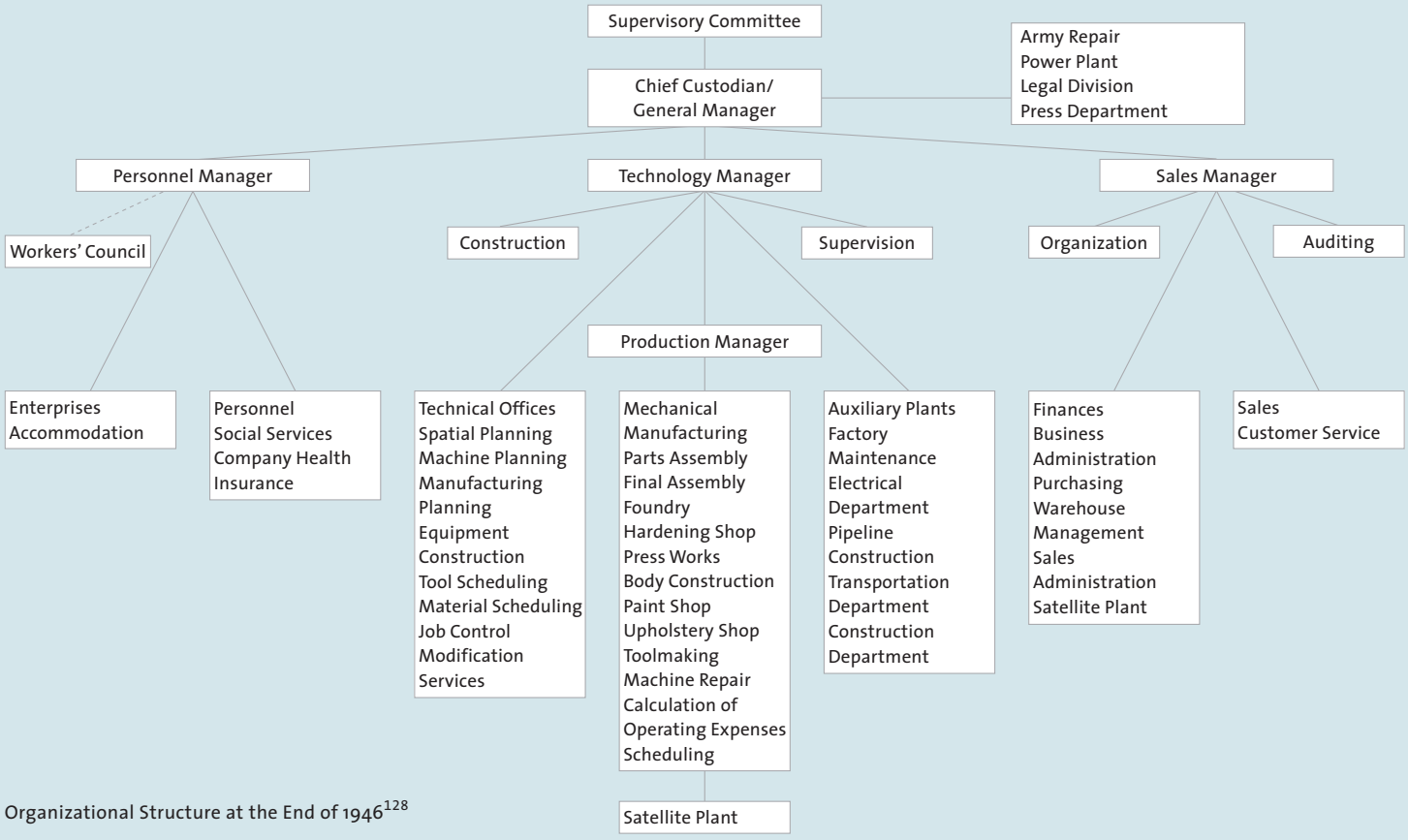
The Organizational Reform of 1946

In addition to the restructuring of the production process, another urgent task presented itself when serial production began: the sales side of the company's organization, which was dominated by technological management, needed to be strengthened and cost considerations, which had not been a priority, needed to be made more important. Chief Custodian Münch and the British factory management worked together on this issue. The latter, as custodian, was obliged to maintain the company's resources and set store in "proper and fair cost structuring" as long as the Allied occupying powers had not yet made a final decision concerning the factory. In this circumstance, the British determined that the Volkswagen factory should "not work with losses nor aim for greater profits."[124]



Organizational Structure in June 1946[126]

For the profitability of the firm, developing a sales division, which began in 1946, was vital. Kemmler, a former member of the executive committee of the "Vereinigte Oberschlesische Hüttenwerke AG Gleiwitz," a metallurgical plant in Gleiwitz, took on this task, assuming his position as the sales manager of the Volkswagen factory on April 1, 1946. Kemmler used the temporary suspension of the management personnel, who were tied up in the denazification process, to finally clarify the division of work areas according to technical and sales criteria. This was because he had gotten the impression that consideration of personnel was preventing urgent organizational issues from being resolved. In a private letter to Münch and Brörmann, he strongly advocated "creating a unified management for all sales concerns." In this context, he suggested that the warehouse management be incorporated into his depart-



Organizational Structure at the End of 1946[128]

ment, especially since a stopgap inventory management had already been established for sales in order to put a stop to the waste and to secure "somewhat orderly accounting." "Give the salesman what the salesman deserves" was Kemmler's principle in fancy words, and he presented an organizational chart for the sales division that accorded with it.[125]

Just how urgent such restructuring was is apparent in the organizational structure of the Volkswagen plant at that time. For example, Sales and Material Management with its Purchasing and Warehouse subdivisions were assigned to the Financial Department while Customer Service was a part of Technical Development.

Kemmler's suggestions influenced the consultations conducted with the British factory officers concerning a fundamental restructuring of the company hierarchy. As a result, Hirst joined in the discussions from the beginning, actively participating – at least on certain points – in bringing the new organizational structure into being. The reform began with the establishment of an Organizational Division in July 1946 and was carried out by the end of the year. It streamlined organizational structures by more clearly delegating responsibilities; on the whole, it constituted a great step forward. It embedded a management level beneath the General Manager consisting of the Technical, Sales, and Personnel Managers, and restructured the individual departments beneath this umbrella. In November 1946, Hirst requested and received an organizational chart for the sales division that was arranged in accordance with Kemmler's ideas.[127]

The reorganization not only strengthened the sales leadership of the company but also the cost control division in the business administration, which was introduced in August 1946. The manager of this new division, Striebig, was able to make a positive assessment by the end of the year: the process had proved successful, he maintained, and had reduced the expenses of individual departmental managers.[129] The Auditing Department, on the other hand, in its annual report, sadly concluded that its work had been made more difficult by the "open sabotage of all cost-control measures."[130] After a thorough review of the Transportation Department, the managers and some workers were dismissed without notice, as was the production manager. Wilhelm Steinmeier then took his place at the end of 1946.

From Factory Management to Business Management

For the British, a functioning and cost-oriented structure for the company was needed not only for economic reasons but also as a prerequisite to transferring decision-making authority back to the Germans. The Industry Division in Minden signaled interest in strengthening the German management and making it more autonomous early on, which fit well with the British treasurer's general demand that occupation costs be drastically reduced by reducing the size of the administrative apparatus. However, the company's shift to civil production, which had already begun, was even more decisive in this regard as it implied such a move. In September 1946, Radclyffe suggested to the members of the Board that the British control committee be put "on a more commercial basis" and transformed on the model of British firms into a Board of Directors, on which two German directors would sit.[131] Although the British did not follow this suggestion, they did stick to their intentions and, after the new organizational structure had been established, decided to give the German management a great degree of autonomy in the administration of the business. As Colonel Radclyffe explained at the Board of Control meeting in early December 1946, it was no longer necessary to strictly supervise the plant because the production organization had been completed and vehicles were being manufactured in sufficient numbers.[132]

The Board of Control planned to transfer the responsibilities of the Mechanical Engineering Branch to the Property Control Branch and to entrust F. T. Neal, the Property Control Branch's local representative, additionally with Hirst's position, who, together with Colonel Radclyffe, was to informally supervise production operations by means of short visits. Hirst stood down in December 1946 and was sent on home leave.

As it harbored grave doubts about whether the interests of the Military Government would be adequately safeguarded, the Property Control Branch had expressed reservations about this decision. As it soon turned out, these concerns were justified. The first attempt to leave business administration to the German management failed. Left to its own devices, the factory management proved to be incapable of keeping operations running and addressing the numerous difficulties the way the British would have liked during the severe supply crisis of 1946/47. The managers' efforts to secure the regular delivery of raw materials foundered, and instead – at least from the British Military Government's perspective – they got caught up in questionable black market deals. Fortunately, although Hirst had officially been transferred, he spent most of his time at his post in Wolfsburg and had stepped in to bring order to the turbid situation. In March 1947, he was officially called back and took up the post of Senior Control Officer as a civil employee of the German Section of the British Foreign Ministry. This experience initially made the British step back from the idea that they could transfer control of the company to the Verwaltungsamt für Wirtschaft (Administrative Office of Economics, VAW) in Minden that had been founded in the process of developing a bizonal, German economic administration at the beginning of 1947. Quite rightly, they feared that, once they surrendered control, deliveries to the Allies would no longer be assured. In a resolution of June 16, 1947, the Board of Control left the production at the Volkswagen factory under its supervision, although it was coordinated in August 1947 with the VAW, two months before the agency was to be moved to Frankfurt am Main and renamed the Verwaltung für Wirtschaft (Administration for Economics, VfW).[133]

Yet the political changes in the summer of 1947 once again put the transfer of decision-making power to the German management on the agenda. After the Moscow Conference of Foreign Ministers failed in the spring of 1947, the Americans and the British shifted the priority in their Germany policy from the creation of an economic entity to the economic and political integration of the Western zones. By the end of May 1947, the Economic Council in Frankfurt had been established for the "United Economic Area" of the bizone. The Executive Council, formed from the state governments, and a directorate, comprised of the directors of the administrative offices partially concentrated in Frankfurt, stood by the fledgling German Parliament. In essence, this set the model for the later constitutional division into Parliament, state representatives, and government. The development of a parliamentary system of government gave more and more weight to the economic and sociopolitical decisions of the Economic Council.[134]

Hirst in Discussion with Schmücker

At the end of July 1947, Major Hirst brought the managers up to speed on the new situation. He told them that, as the Economic Council comprised a higher authority in the future, the Military Government would no longer be able to give orders to agencies or suppliers in the British zone. Consequently, the factory management needed to be transformed into an "executive board" with more responsibility and greater authority. This board would have to take care of production and of procuring the necessary materials by working very closely with the Economic Council and with its subsidiary agencies. Hirst pledged that the British and American Military Governments would fully support this objective in the pending negotiations.[135]

On August 1, 1947, the Board of Control passed a resolution to create an Executive Committee for the Volkswagen factory that Chief Custodian Münch, Sales Manager Kemmler, and Technical Director Steinmeier would be on. This was not entered into the trade registry out of legal considerations that Münch wanted to personally clarify in Berlin.[136] The formation of the Executive Committee once again triggered a discussion concerning the principles of the reform of the organizational structure as this continued to be plagued by serious and costly deficits. There were still no organizational guidelines. The restructuring of the Auditing Department that Münch had demanded in order to control costs on an ongoing basis had not been undertaken. And the cooperation between the sales and technical divisions turned out to be a persistent structural problem – only when the company was restructured in April 1948 was this problem resolved.

Conflicts in Company Management

The biggest bone of contention in the organizational structure, however, was the Hollerith System. Introduced to improve cost monitoring, material control, and payroll accounting, this new process had caused serious disturbances in the production flow, material management, and salary calculations. The costs associated with this, on the one hand, and the complaints of the Technical Department along with the great dissatisfaction of the workforce, on the other, prompted the management to do something as soon as possible.[137] Münch described cost reductions as "a vital issue for our company that is very closely intertwined with the structure of the organization."[138]

Thus, the approaching organizational reform was aimed primarily at reducing costs and bringing the sales division into focus, especially since the Hollerith System had not yielded the hoped-for savings but instead had exposed the company's organizational deficits. There was a fundamental disagreement concerning the necessity of such measures between General Manager Münch, who was pushing for cost reductions, and the Sales Manager, who regarded further cost reductions in his division as "not possible,". Kemmler suggested that an external consultant be brought in to resolve this issue. The auditing company Lang and Stolz was commissioned to evaluate the suitability of the Hollerith System, and thus scrutinized the entire sales sector. Their expertise, together with the statements of department heads, resulted on September 22, 1947, in the contract with the "Deutsche Hollerith-Maschinengesellschaft m.b.H." being canceled and eventually to Kemmler's resignation. This was because Kemmler balked at the suggested reforms and regarded the prospective savings as insignificant – they barely affected the vehicle price. Münch and Steinmeier saw things differently. They backed the view of the auditors, who in their reply to Kemmler anticipated the coming competition and stated: "Rationalization does not mean eradicating very serious and large defects, because they can generally be directly perceived and are therefore known; rather, it means bringing costs closer to their optimal limit. Rationalization is a matter of nickels and dimes."[139]

Consequently, Kemmler was largely isolated on the team of leaders. His loss of power had just begun in August 1947 when Purchasing and the various materials departments associated with it were removed from the sales division and placed under the direct authority of the General Manager. In early October, Kemmler complained to Control Officer F. T. Neal, McInnes's successor, that Münch had taken over the entire responsibility for the sales division a month before. But the British threw the ball back in the Executive Committee's court, which they felt should decide the matter on its own. As the extreme differences on the issue of organizational reform proved to be insurmountable, Kemmler resigned his position and left the company on November 7, 1947.[140]

His deputy, Chief Financial Officer Hans Hiemenz, assumed the chairmanship of the commission called together by Münch on October 8, 1947, to implement the suggestions for restructuring the company. Hiemenz, too, gave cost reduction the highest priority and decried the company's lack of cost awareness in clear language: "I have the impression that everybody enjoys generating costs because, on the one hand, in doing so he can express his greatness, and, on the other hand, he is convinced that it doesn't harm the factory but rather the British Military Government." On October 31, the Commission presented its suggestions for a new organizational structure oriented toward the usual, collegial atmosphere of business management in German industries. While they planned to keep a chief custodian who would be required to report to the Board of Control, the strategic decision-making authority was to be transferred to a General Manager; both a technical and a sales expert were to support him as supervisors. The main department heads, who had achieved the rank of procurists, comprised a level that was to be divided as follows: Technical Department, Personnel Department, Purchasing Department, Sales Division, Financial Department, and the Business Management Department.[142]

The organizational reform planned for January 1948 did not occur, however, as it was tied to resolving an important personnel issue that would eventually lead to Münch's dismissal from his position as General Manager. Despite this, the Volkswagen factory had made great strides since its postwar start, and not only with regard to company organization. The manufacturing process, too, had begun to take on the shape of a competitive commercial enterprise. At the same time, the expansion of the workforce had not progressed to the same extent, especially because of high turnover. Major Hirst commented retrospectively on the development with the appraisal that, at the end of 1947, the Volkswagen factory had begun to become "a profit oriented enterprise instead of a party business."[143]

3.2 The Fluctuating Workforce

The production program for the British that began in July 1945 confronted the Volkswagen factory directly with worker and housing shortages. On July 3, there was a meeting with the city administration concerning immediate measures that could be taken. Within a week, about 1,000 skilled workers were to be brought in from other cities in the British occupied zone, but they could not live in Wolfsburg because the available housing was either occupied by the British army or already overcrowded. To provide housing for the new workers, both factory and community leaders felt it was imperative to "free" Compound "Am Hohenstein" and thereafter Compound Laagberg of "foreigners." In fact, leaders wanted foreigners to leave Wolfsburg altogether so that German workers could "conduct their work without being disturbed or bothered by foreigners."[144]

This plan was directed against "displaced persons" (DPs) – this was the official Allied designation for foreigners dwelling in German territory – mostly former forced laborers and prisoners of war. On the order of US troops, many DPs had been housed in the seized barracks, and there they waited to be returned to their home country or for an opportunity to emigrate overseas. There were quite a few DPs right before the occupation of the city, forced laborers comprised 83 percent of the 9,121 workers.[145] As these foreigners took up accommodations and generated costs, both factory and city administrators pressed for them to be removed from the city.

At the end of May 1945, the city assumed the financial burden of accommodating and taking care of foreign workers in accordance with an agreement between Mayor Laurent and factory manager Brörmann. But the city quickly distanced itself from the promise to reimburse the Volkswagen plant for the upkeep of housing in the barracks, including the loss of rental income. As the camps and homes generated high costs, Brörmann handed them over to the custodial care of the city authorities on July 10, 1945, for the symbolic sum of one Reichsmark. In exchange, the city authorities promised to make the dwellings available, in excellent condition, and especially for Volkswagen factory workers.[146] But the agreement was not upheld because the Allies built a central DP camp in Wolfsburg so that the British Military Government needed a large part of the camps. Wolfsburg temporarily became a gathering place for the repatriation of DPs. In early 1946, nearly 9,000 DPs of the most diverse nationalities lived there, with new ones arriving every day.[147]

Factory leaders initially believed that they would be able to meet the need for workers without difficulty, but this proved to be illusory. The company would not be able to overcome the gap in the workforce caused by foreign workers returning to their homes until some time in the 1950s. This gap could not be filled with evacuees and refugees from the former German eastern territories. Although the prospect of accommodation and provisions attracted such people to seek work at the Volkswagen plant in Wolfsburg by the thousands, many of them regarded their occupation there as a stopover on their way to West Germany and only stayed for a short time. As a result, in the first postwar years, the city resembled a transit camp for destitute and uprooted people. Turnover among the workforce was correspondingly high; a fundamental cause of the perpetual worker shortage, it set limits to any efforts the company made to recruit a core workforce.[148]

High Turnover and a Lack of Skilled Workers

Although the Volkswagen plant paid higher than average wages, the turnover in the workforce in 1946/47 exceeded 50 percent. In the first postwar year, 4,750 of 8,251 workers left the company. In 1947, with workforce expansion stagnating, the company hired 4,252 workers while 4,131 quit. The number of skilled laborers dropped from 2,905 to 2,731.[149] The negative effects of this turnover on production were made even worse in that most employees did not give notice before leaving. Accordingly, personnel planning was largely thwarted because it could not prepare for such departures. In early June 1946, the factory management counted 1,431 workers who had left "without permission" since the beginning of the year. In order to meet the personnel requirements that had grown because of denazification efforts, the company needed 600 more workers, who first had to receive job training.[150] At that time, hundreds of external temporary workers were on hand as various departments had been attempting to ameliorate the worker shortage since the fall of 1945 by assigning certain tasks to small firms. Kemmler put an immediate stop to this practice in the summer of 1946.[151]

The instability of the workforce impacted the qualification structure of the company in so far as it cemented the shortage of qualified workers by the beginning of the DM era. Despite tremendous efforts, the Personnel Department failed to procure enough qualified workers to ensure a smooth production flow. From 1945 to 1948, the number of qualified workers rose only slightly from 2,406 to 2,762. Even the number of trained workers remained roughly constant, hovering around 550, although the factory management had already initiated a qualifying program for new, untrained workers.[152] Some of the effects of the shortage of skilled laborers on vehicle production were rather severe. When an experienced machinist or toolmaker who could not easily be replaced left or failed to show up, it could sharply reduce the quantity as well as the quality of products in a department. This was also true of the assembly lines, which required a precise number of workers, leaving little room for the improvisations that had spread through all the production areas.[153]

The high turnover rate – which persisted until the currency reform of 1948 – had a variety of causes, among which psychological factors in the generally uncertain postwar period should not be underestimated. Both the threat that the plant might be dismantled and denazification bred deep insecurity among the workers, which negatively impacted their morale. In addition, high inflation and the rapid drop in the Reichsmark curbed their willingness to work because, with the rapidly expanding black market, their wages hardly motivated them to maintain a steady job. Moreover, turnover was at least intermittently influenced by the proximity of the Soviet occupied zone, whose border lay only 10 kilometers east of Wolfsburg. When production was interrupted for three months in 1946/47 and no wages were paid nor warm meals served, workers switched to the Soviet zone in droves hoping for better provisions. Most did not come back.

Desolate Barracks

But the greatest obstacle to stabilizing the workforce was probably the disastrous housing situation. The Nazis had left a collection of barracks there where the exemplary "Stadt des KdF-Wagens" (Strength through Joy City) was to be. Wolfsburg's chronic housing shortage was an inheritance from the "Third Reich" and not a consequence of Allied air raids. At the end of 1945, there were only 3,385 housing units for 17,872 inhabitants, and as construction materials were lacking, new dwellings could not be built. Most factory workers had to make do with the provisional accommodation in barracks, and even these were not available in sufficient numbers because the Allies used them to house DPs. Some of the barracks were in a catastrophic state. Up to eight workers, separated from their families, would share one room in them. These conditions inevitably led to conflicts among the residents. The housing situation exacerbated the general tendency to migrate among refugees who did not want to work short-term at the Volkswagen plant but rather sought lasting employment and otherwise would have stayed. Given the prevailing housing conditions, it was very difficult to get skilled workers, in demand everywhere, or managers to come. On the contrary, whoever was able to left the city.[154]

Before this backdrop, the expansion of the workforce that began in July 1945 was no easy task. To meet the staffing needs for the serial production of the Beetle, the British military, from the beginning, made use of the transregional job market, bringing 883 workers from throughout their zone to the Volkswagen factory in October alone. Released prisoners of war and refugees comprised the bulk of the nearly 3,000 workers who took jobs at the factory, raising the number of staff to over 6,000. Supported by the local, regional, and state employment agencies, the practice of recruiting workers from across the zone continued to be an important tool for overcoming the worker shortage. When gaps in the personnel could no longer be filled with prisoners of war, the DPs recruited from within the British occupation zone provided a welcome source for offsetting them, particularly since they were housed in special compounds and did not strain the local housing market.[155] Yugoslavian and Latvian DPs hired for production operations, who comprised a steady 500 to 600 workers from March 1946, significantly shaped the staff structure of the company. Among these workers, as well, the turnover rate was high, primarily because they gradually returned to their home countries or emigrated overseas. Moreover, the German management had to accept that the foreign workers – after the injustices they had suffered – did not always exhibit the necessary discipline on the job, especially since the DPs living in the British zone were subjected to an official work requirement beginning in October 1946.[156]

The production plans announced by the Board of Control in June 1946 drastically increased staffing needs. To build 2,500 vehicles a month, the workforce needed to be augmented by 1,173 men, with 80 percent of these devoted to production operations. Indeed, even to produce 1,000 vehicles a month, the staff was 300 workers short because too many of the new hires, as Production Manager Karl Huland critically noted, were placed in non-production-related departments.[157] If getting the staff needed for the expansion of production proved rather difficult because the Volkswagen plant was only given second rather than the highest priority, it was finding accommodation for these workers that presented the real problem.

Hunger and Poverty as the Ten-thousandth Beetle Rolls off the Assembly Line

Housing Shortage in Wolfsburg

In a managers' meeting in June 1946, Brörmann complained about the intolerable condition of the Laagberg Compound, blaming this for the fact that workers who were obligated to work for the Volkswagen factory from the Friedland Compound had again disappeared after receiving their advance payment. The furnishings, including beds, tables, and chairs that had been purchased eight weeks before, had once again been stolen. Due to looting and destruction, the company had, up to this point, spent an additional RM 140,000 on these compounds that it had transferred to the care of the municipality. Major McInnes and the factory management agreed that the city would have to cover these losses.

In early July 1946, the factory management deliberated measures to mitigate the housing shortage. It was possible to set up 12 barracks to accommodate 1,200 men, but this was purely a mass housing solution. By expanding 18 other barracks, the manager of the Construction Department hoped to house another 1,800 men. The costs for both projects came to RM 547,000. For medium-term planning, it became possible on short notice to prepare living quarters for 300 workers in the Laagberg Compound within a month's time. However, recent experiences provided an argument against building mass housing. The factory management had tried to accommodate unmarried workers from the district of Helmstedt in Wolfsburg because the shuttle service arranged for them had stalled on account of a tire shortage. But these workers were not very inclined to give up their permanent residences for housing in barracks. It had also not been feasible to relocate workers from Soltau because there was no housing for their families.[158]

Consequently, when Personnel Manager Huhold suggested that the Reisling Compound be made available to accommodate new hires and factory workers with their families who were currently stuck in poor housing situations, there was general consent. Although the details of the plan still had to be worked out, the idea was to relocate the people then living in the Reisling Compound – some of whom were construction workers at foreign firms – to the barracks and to move the families then in the barracks into their place. General Manager Münch, who gave the expansion of housing the utmost priority, accepted the fact that the construction materials arduously saved up for winter work would have to be used for setting up the accommodations. Alongside the "housing exchange operation," the factory management declared the expansion of the Laagberg Compound and the Youth Compound to be the top priority.

A further housing option was blocked by the city's intention to transform the hospital barracks it had taken control of the previous year into a home for singles. Up to this point, the city had not taken any steps to realize this plan. After several futile attempts to get city administrators to make a decision, Münch set them a deadline of August 8, 1946. Under this pressure, the city finally gave in to the company's demand to fill the home for singles with factory personnel while keeping open the option of using it to provide for a hospital later on. The company's modest success in finding accommodation for its workers was, however, spoiled almost immediately when the British City Quartermaster ordered a number of properties in the area to be seized for its own use. These included the Hohenstein Compound, the barracks of the city construction office, the compound east of Rothehofstraße, the compound south of the fire department up to Ernst-Toller-Straße, five barracks west of the public utility company, and the compound between Fallerslebener Straße and the railroad.[159]

To alleviate the housing shortage, the company had little choice but to resort to renovating and expanding the makeshift accommodations set up for the DPs. In the common compound on Fallerslebener Straße, the large sleeping areas were divided into rooms for six to eight people to make them more comfortable. Company renovations in the Reisling Compound transformed two canteen barracks into eight new apartments. For young workers and apprentices who, since November 1946, had once again been able to complete a training course at the Volkswagen factory, the company built a youth compound.[160] By expanding the Laagberg Compound, the factory management had at least come one step closer to its goal of establishing a core group of skilled workers. By the end of 1947, 140 families had found a home there that was made more attractive by neighboring garden plots, the opening of a toy store, and the nearby school. At the same time, even though British factory officers fully supported the company in its efforts to acquire the use of the Hohenstein Compound up to 1949, it did not succeed in this endeavor. This was all the more unfortunate as Münch regarded it as very well suited for expanding into a family compound; it would have marked a turning point in the development of the core workforce. The General Manager constantly pushed for the return of the factory's own accommodations as he saw this as the "key to alleviating the dismal housing situation in Wolfsburg."[161]

Body Shells

Building Up the Workforce and Labor Productivity

While the factory management made slight progress in acquiring housing, the worker shortage grew more severe in the spring of 1947. From April on, the Employment Office was no longer able to meet the factory's workforce needs from within the Wolfsburg region or from other districts. In cooperation with the employment offices of Wolfsburg and Uelzen, the state employment office of Hanover, and the refugee compounds, the company had begun to draw workers from the Soviet occupation zone. As the management had "not had good experiences" with these workers, Yugoslavian and Latvian laborers from the ranks of the DPs were to be employed to cover the staffing needs for the increased production.[162]

In the summer of 1947, the factory management made the necessary preparations to accommodate these new workers after the British had announced that they would give back the common compound on Mörserstraße. The Latvians housed there were transferred to the Hohenstein Compound in early August so that the 400 Yugoslavs whose arrival was anticipated could move in; by August 9, 1947, only 105 of them had come. Sixteen of these moved back that very same day to the DP compound on account of the poor conditions they found; 36 were unable to work, and the British army headquarters immediately deployed nine more for its own purposes. In addition, the return of the common compound necessary for accommodating the DPs – which was completely packed at the end of August – was delayed. As other housing options for the remaining DPs who were expected were not available, the company very quickly had to negotiate with the appropriate British officer to get barracks allotted to it for this purpose.[163]

Exhausted Employee

In September 1947, the remaining Yugoslav workers finally arrived. Only a few of them had had appropriate training; most of them had worked in agriculture. In accordance with their qualifications, 200 men were employed in non-production-related departments and 130 in production. Problems arose with the new workers, about which Münch was informed in a report of the Technological Management: As the Yugoslavs had no work clothing and could not otherwise be moved to start their jobs, they received "protective clothing" that they were, in part, not entitled to. This upset the German employees, who had to acquire their own work clothes. Moreover, the workers assigned to the paint shop, especially, showed little inclination to perform the dirty and hard physical tasks like cleaning the auto body shells or polishing them when they had been sprayed, just as they refused to do piecework. By early October, about a quarter of the Yugoslavian workers were absent either due to sickness or unexcused. Production manager Höhne was, nonetheless, confident that the people would grow accustomed to the work, although he conceded that one would have to make it possible for them to purchase work clothing.[164]

The high rate of absenteeism in the first half of 1947 exacerbated the worker shortage which rose to 25 percent on average in the production division. One reason a quarter of the staff stayed away was that they needed to go on foraging excursions and conduct black market business to secure their survival. Other reasons, though, were the poor diet and general exhaustion, which contributed to an official sickness rate of 9 percent in June 1947.[165] Racked by hunger, many workers suffered from the most various diseases and often collapsed during their shifts. Accordingly, in April 1946 the weekly work hours were reduced from 48 to 42.5.[166]

The insufficient diet was one of the principle reasons for the generally low performance level of the Volkswagen workforce. But the bad work ethic, as the British officers had surmised, and the quality of the management also played a significant role. In March 1947, General Manager Münch found out that several times, all the workers in a division had left their workstations before the bell at 16:40, and that the supervisor claimed he had not been able to prevent them from quitting early. This occurrence made it advisable for the company to take a closer look at the suitability of its managers. Münch therefore specified that applications were to contain a reference for the qualification of the management staff including their previous bosses and supervisors and announced that, if something like that happened again, he would have to begin transferring or firing people.[167] The foremen's obvious lack of authority confirmed the management's assessment that they were less suited than their counterparts in the rest of the industry, and that the overseers, too, were "weak forces," resulting in the leadership tasks on those levels of the hierarchy in the company "not being performed as they really need to be."[168]

Production and Non-Production Divisions

The high turnover and absentee rates kept the factory's productivity low. In addition, the imbalance between those employed in production and non-production divisions had a negative effect on the cost structure of the company. Counting among the non-productive were laborers who kept the production process – negatively impacted by machine wear and shortages – going by repairing machines, producing tools, or putting the factory in working order. These workers generally had higher qualifications, as well as a different wage system than the production workers. Whereas non-production workers got an hourly wage, production workers were paid by the piece. Inherited from the war economy, the disproportion between the two groups – two-thirds were non-production workers – was cemented by the repair and renovation work needed after the war ended. The situation contradicted the principle of an efficient automobile factory and depressed the profitability of the company.[169]

In mid-June 1947, Striebig, the manager of the Business Administration Department, put forward an alternative perspective on the often criticized imbalance between productive and non-production work. First, he corrected the proportion by subtracting 850 positions not related to factory work – in British offices, the power plant, landscaping, as well as 1,050 clerical workers and 310 interns – from the total workforce of 8,100. The proportion of clerks had shrunk to 14 percent from 17 percent the year before, al-

though the "ideal value" was 12 percent. Then Striebig counted some of the workers of the Vorwerk and those who helped with army repairs as productive because they produced parts that other companies had to purchase from them. Striebig's result was a relation of 3,020 productive to 2,860 non-production workers who were largely occupied with removing war damages.[170] Nonetheless, even Striebig's corrected perspective revealed an overly large portion of non-production workers, who ultimately drove up production costs and limited the company's wiggle room in calculating the price of the Volkswagen.

Working together with the Workers' Council, the company management attacked this problem head on at the end of 1947. Münch stipulated that precise reports were to be issued on the needs of the non-production departments, and especially of the Construction Department. These were prerequisites, he argued, to utilizing all available staff for increased production, on the one hand, and to bringing the necessary non-production work in line with what was financially possible. As the General Manager had figured on further price reductions for the Beetle, the non-production departments needed to be reducible at a stroke: "Otherwise, we will inevitably experience financial difficulties that there will no longer be any way out of."[171]

Münch's successor Nordhoff also quickly took action on this issue. Immediately after he took over in January 1948, he ordered a new "sorting out campaign in non-production departments." In his estimation, some departments could eliminate a third of their personnel.[172] But such measures were not very successful at first for two reasons: First of all, employees in the non-productive sector were not very interested in transferring to production because these jobs were usually physically demanding; moreover, the small difference in pay between piecework and an hourly wage provided little material motivation. Second, the worker shortage limited the Personnel Department's options for pressuring the workers. Only after the Deutsch Mark was introduced was there a slight improvement in this, even if the Volkswagen factory had to bear the burden of too many non-production workers into the next decade.[173]

The Break of Currency Reform

The currency reform in June 1948 marked a turning point in the expansion of the staff and the problems associated with that. The management was then in a position to use money to affect the performance level and staff structure. At the same time, the general provisions improved, likewise improving the overall health of the workforce. Already in March 1948, the bizonal agencies had ap-

proved a wage increase of about 15 percent on average. When wage controls were eliminated in October, there were further income concessions to the workers, which made production jobs more profitable for workers than non-production ones, correcting imbalances in the wage and salary system. The average hourly wage rose from August to November 1948 from DM 1.10 to DM 1.34, bringing the Volkswagen plant far above the usual wage for the automotive sector.[174]

The expansion of the workforce moved decisively forward after the currency reform: Compared to the previous year, the number of workers rose to 8,719, and by the end of 1949 had leapt up to 10,227. Sick leave was reduced from 10 to 12 percent at the start of 1948 to 2 to 4 percent by year's end. The absentee rate, which had already dropped to less than 10 percent by April, fell further to 4 percent by October, where it stayed throughout 1949. But, above all, the turnover rate dropped. Between January and June 1948, 1,407 new employees took up positions at the plant and 1,495 quit. In the second half of the year, there were 758 new hires and only 333 departures. In 1949, the comparative figures were 2,279 and 771.[175]

The housing shortage, on the other hand, continued to be difficult to overcome. In April 1949, the Volkswagen factory negotiated with the Lower Saxony Labor Ministry about building several apartment blocks to redress the pressing housing crisis. Several of the existing apartments were still overcrowded, and many plant workers still lived in barracks. One part of the staff lived outside Wolfsburg and was brought to work in factory-owned buses. New appointments continued to fail because the company could not offer the applicants even the prospect of an apartment in the near future. Moreover, the existing accommodations occasionally left much to be desired: Those living in the home for singles still slept on sacks filled with wood shavings until Nordhoff permitted the beds to be fitted with mattresses in mid-May 1949. In addition, over the course of the year, the company completed a communal residential building project at its own expense that had been just a shell before, thus providing workers with 174 apartments. After the Military Government had approved the making of contracts concerning hereditary building rights in May 1949, private construction got a boost, ushering in a turning point in the housing situation.[176] When the "Volkswagen-Wohnungsbau-Gemeinnützige-Gesellschaft mbH" was founded in January 1953, it underscored just how important apartment construction was for the development of the workforce in Wolfsburg.

The commission representing the workers established in November 1945 was faced with the same problems that prevented the development of a core workforce in the first postwar years. Turnover and an economy of scarcity, but also the continuity of the "Betriebsgemeinschaft" with right-wing extremist potential, left their mark on the representation of interests within the company and gave specific form to internal company work relations at the Volkswagen plant.

3.3 The Beginnings of Co-Determination

The Workers' Council representing employee interests began as a provisional arrangement. When production for the British army started up, the representative body of employees, having been formed through the initiative of Social Democrats and Communists within the workforce, began its work. The leader was the future Wolfsburg mayor Karl Hieber. Having previously been the chair of the Workers' Council in a Mannheim company, Hieber advised his mostly inexperienced colleagues in developing the first Volkswagen Workers' Council. Although the British Military Government had permitted the founding of the previous employee council consisting of seven workers, it did not concede any rights of co-determination to it. It had no influence over personnel decisions or on the distribution of manual laborer cards.[177] Nonetheless, the REME officers at the site were certainly well aware early on of the value that representation of the company's interests had for the necessary development of the workforce; by the end of August 1945, only by recruiting across the entire zone had this campaign brought almost 2,000 new workers, primarily released German prisoners of war and refugees, to the Volkswagen factory. The problems associated with this situation were easier to resolve by means of a contact and intermediary embedded within the ranks of the employees; such a contact could limit the losses caused by friction in the integration of workers into the production process and reduce the potential for conflict within the amorphous workforce.

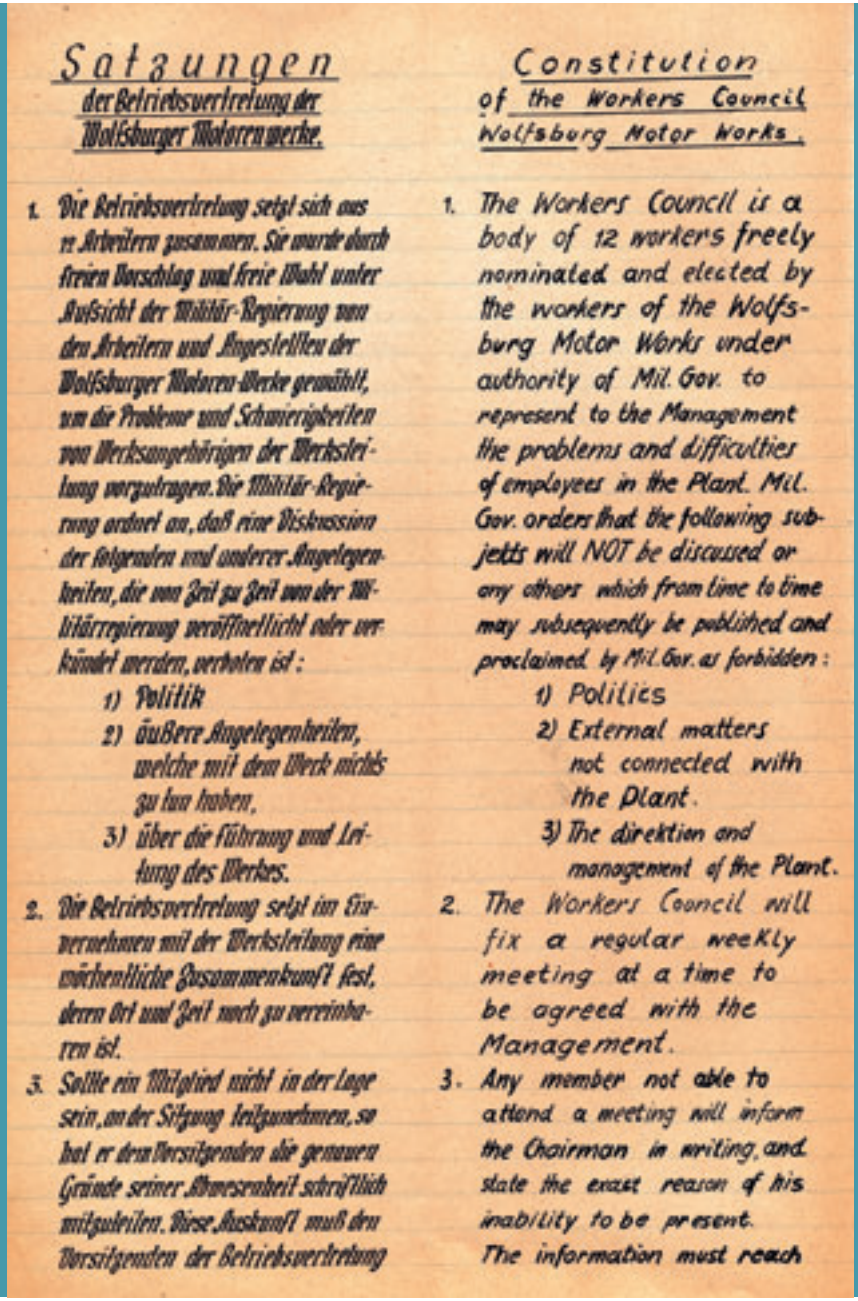
As the livelihood of the Wolfsburg population depended on the continued existence of the company, the Workers' Council pursued a decidedly company-oriented course that was independent of the union from the beginning. Contributing to this was the fact that the employee representatives in Wolfsburg had not been included in the process of newly founding the union, so that the relationship between the two organizations was marked rather by mutual mistrust in the early stages.[178]

The Workers' Council gave developing Volkswagen production absolute priority, although its demands for a democratic new beginning had to be temporarily sidelined due to economic necessities. This was evident in a resolution passed on August 22, 1945, in which the council approved of the British denazification practices and, at the same time, reacted to the factory management's attempts to remove active anti-fascists from the workforce.[179] One man affected by this, for example, was Wilhelm Kiesel, a unionist who was appointed to the factory management in May 1945. Probably instigated by Brörmann, Kiesel's dismissal in August was agreed to by the British Military Government, which was not at all interested in German assistance in the denazification process and approached the Antifa-Movement with reserve during this phase.[180] The resolution concretely stipulated that all skilled laborers were needed for the rapid start up of serial production, and so the Workers' Council would have to temporarily accept the fact "that some men keep important jobs although they are objectionable in a political and moral way." Conversely, the start up required that two "anti-fascist specialists" whose many years of combined experience at the factory "could help in our work of reconstruction" remain in the company though they had been threatened with dismissal.[181]

From the British factory officers' perspective, the company-oriented policies of the Workers' Council reinforced its meaning for the further expansion of the workforce and for overcoming the problems this would bring.[182] Moreover, such participation on the part of employees fit Hirst's understanding of democracy as well as his Anglo-Saxon notions of an open, constructive dialogue between the factory management and the workers. He brought both of these things into work relations at the factory after it had been determined that the work mentality of the laborers shaped by National Socialism matched the negative image of Germany that dominated in Great Britain in some respects.[183] He found the workers' readiness to receive orders and their lack of initiative incomprehensible and attributed them to the fact that the workforce of the Volkswagen plant had "never functioned like the staff of a normal factory."[184] In an enterprise once run under authoritarian principles, Hirst established a new work and leadership style based on cooperation and participation that gave both management and workers responsibility for the company. He sought out direct contact with the workers, was always ready to listen to their problems, and encouraged them to work autonomously and independently.[185] Thus, Hirst contributed to realizing the British concept of democratization and helped lay the groundwork for educating Germans for democracy.[186]

The First Elected Workers' Council

Even before the Military Government had issued a regulation to form a new Workers' Council, Hirst had already initiated the first elections for such a council and disbanded the old one in October 1945. However, the candidates were not allowed to reveal their party and union memberships nor make political declarations. Hieber's campaign, for example, described him as an "expert of integrity and good judgment" for whom "the prosperity of all of humanity" lay close to his heart.[187] With continuity of personnel, the provisional council became a democratically elected Workers' Council. Seven members of the twelve-member body were SPD party members, and two were KPD party members. The British government strictly regulated the work of the council with a constitution it had decreed. The agendas of the meetings had to be presented to Hirst for his approval, and factory officers had the right to participate in the meetings, at which discussions of policies or the factory administration were categorically prohibited.[188]



Satzungen
der Betriebsvertretung der
Wolfsburger Motorenwerke.

1. Die Betriebsvertretung setzt sich aus
11 Arbeitern zusammen. Sie wurde durch
freien Vorschlag und freie Wahl unter
Aufsicht der Militär-Regierung von
den Arbeitern und Angestellten der
Wolfsburger Motoren-Werke gewählt,
um die Probleme und Schwierigkeiten
von Werksangehörigen der Werksleit-
ung vorzutragen. Die Militär-Regier-
ung ordnet an, daß eine Diskussion
der folgenden und anderer Angelegen-
heiten, die von Zeit zu Zeit von der Mi-
litärregierung veröffentlicht oder ver-
kündet werden, verboten ist:
   1) Politik
   2) äußere Angelegenheiten,
   welche mit dem Werk nichts
   zu tun haben,
   3) über die Führung und Lei-
   tung des Werkes.
2. Die Betriebsvertretung setzt im Ein-
vernehmen mit der Werksleitung eine
wöchentliche Zusammenkunft fest,
deren Ort und Zeit noch zu vereinba-
ren ist.
3. Sollte ein Mitglied nicht in der Lage
sein, an der Sitzung teilzunehmen, so
hat er dem Vorsitzenden die genauen
Gründe seiner Abwesenheit schriftlich
mitzuteilen. Diese Auskunft muß dem
Vorsitzenden der Betriebsvertretung

Constitution
of the Workers Council
Wolfsburg Motor Works.

1. The Workers Council is a
body of 12 workers freely
nominated and elected by
the workers of the Wolfs-
burg Motor Works under
authority of Mil. Gov. to
represent to the Management
the problems and difficulties
of employees in the Plant. Mil.
Gov. orders that the following sub-
jects will NOT be discussed or
any others which from time to time
may subsequently be published and
proclaimed by Mil. Gov. as forbidden:
   1) Politics
   2) External matters
   not connected with
   the Plant.
   3) The direktion and
   management of the Plant.
2. The Workers Council will
fix a regular weekly
meeting at a time to
be agreed with the
Management.
3. Any member not able to
attend a meeting will inform
the Chairman in writing, and
state the exact reason of his
inability to be present.
The information must reach

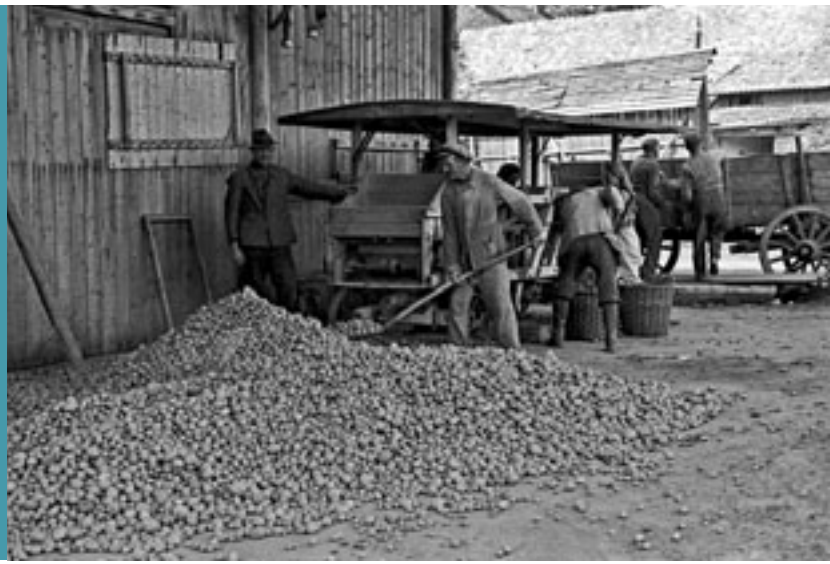
Constitution, November 1945

Until the summer of 1946, the Workers' Council had neither participation nor co-determination rights, so that its work was essentially limited to taking care of company-internal social issues.[189] This included, for example, the support fund established in March 1946, to which every worker could make a monthly contribution of 50 Pfennig. Under the conditions prevailing at that time, this fund was an important means of shoring up financially strapped employees. In addition, the Workers' Council, at the behest of the Personnel Department, made increasing discipline at work one of its aims, putting measures in place to discourage workers from leaving their posts early or from having coworkers' cards stamped.[190]

After the Allied Works Council Law was enacted in April 1946, the council urged Hirst to effect the legally fixed co-determination rights and made its first organizational preparations. In order for the council to influence personnel decisions, a commission was formed to review appointments and dismissals. Then at the start of July, a wage commission was organized to provide advice, along with the union, concerning tariff negotiations in the Volkswagen factory.[191] But the Board of Control took a wait-and-see approach to implementing the Works Council Law. The request brought to Hirst in early June 1946 to conduct the work of the council according to the new law until provisions for its implementation had been decreed went unanswered.[192] Instead, British pragmatism in the question of co-determination made itself felt in a negative way. After calling the Workers' Council to a meeting of the production commission one single time, Hirst rejected its further participation in June 1946, explaining that the arrangement had not been successful. The Workers' Council protested this exclusion as the Works Council Law expressly gave it the right to make suggestions for improving work methods and production processes to its employer.[193]

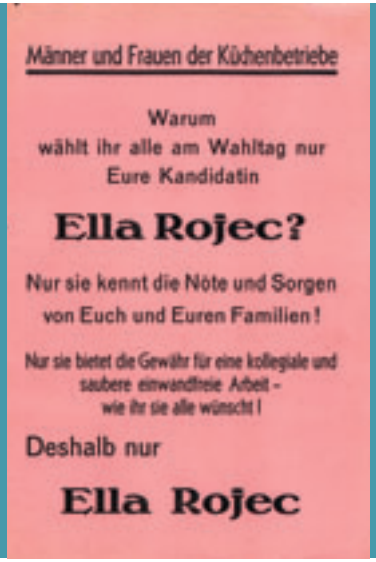
Thus, General Manager Münch was the one primarily responsible for the Workers' Council making progress on the issue of co-determination rights in the second half of 1946. Seeking balance, Münch certainly recognized that the increase in production envisioned by the British and the necessary extension of work hours could only be achieved with the support of the Workers' Council. Likewise, the planned shift to group piece rate pay also required the Workers' Council's participation.[194] Accordingly, Münch called a meeting on July 22, 1946, at which an increase in the workweek from 42.5 to 48 hours was debated, which led to the introduction of Saturday shifts.

Potatoes from the Factory's Farms



The Workers' Council objected to this demand on the part of the management, pointing to the poor nutrition and health of the workers. Their sorry condition begged the question of whether they would physically be able to handle a heavier workload. Nevertheless, the council signaled its willingness to compromise, especially since the British had threatened to close the factory if production were not increased. The factory management promised to get better provisions for the workers, particularly fresh vegetables and other products from the factory's own farms and items grown in its own gardens.[195]

Having agreed to get employees to work longer hours, the Workers' Council put itself in a strong position for negotiating options for its co-determination. In August and September 1946, it was granted co-determination rights for appointments and dismissals, as well as for changes in workers' status in the wage group catalog. In October, the British Military Government suspended the old Workers' Council constitution and gave the new one the opportunity to determine its own tasks in accordance with the new Works Council Law.[196] Yet it still took nine more months for these rights to be formally set down in a company settlement.



Posters, December 1946

Structural Problems in the Workers' Council

After Social Democrats and Communists had more or less been able to cooperate smoothly in the first two Workers' Council meetings, a conflict arose during the election of the Workers' Council chairman in December 1946. The KPD comrades felt strengthened by the outcome of the elections, particularly since they comprised nearly half the members of the Workers' Council. They denied the Social Democrats' claim to leadership and sent Erwin Blöhm to run against the SPD candidate Otto Peter. The first ballot ended in a draw, but in the second round Peter prevailed. Then the Communists cast doubt on whether the election procedures had been properly followed and stayed away from the next Workers' Council meeting in protest. But a more conciliatory attitude was already on display at the next meeting on December 20, 1946. The adversaries decided to draw up the election protocol more carefully in the future and further announced the management's agreement to disburse a Christmas bonus as well as Christmas stollen to the members of the workforce.[197]

The internal party-oriented political differences, which intensified into conflicts on certain points, did not represent a larger obstacle for the protection of interests in the Volkswagen plant. The work of the council, however, was crucially impaired by two factors in particular: the economy of scarcity, on the one hand, and the high turnover and structure of the staff, on the other. Only a few of the remaining employees after the end of the war had union experience from the Weimar period, and those in the younger generation who had been socialized under the Nazi dictatorship were not familiar with fundamental democratic principles in the economy or society. The same was true of the thousands of soldiers and refu-

gees who had intermittently joined the small core staff since July 1945 and dominated the employee structure at the Volkswagen factory with their high turnover rate.[198] Chairman Kiesel of the General Trade Union founded in December of 1945 pointed out the problems associated with this from the union's point of view when he deplored the staff's lack of organization in May 1946. He attributed the union's inability to get a stronger hold to the fact that "the predominant majority of the staff consists of several thousand young soldiers and released prisoners of war, who still lack an understanding of union principles."[199] Moreover, there was no functioning and trusted core staff to take charge of recruitment and new enrollment. A later Workers' Council member remarked self-critically that the union did not advertise enough and so the staff got the impression that this organization was unnecessary.[200]

Apart from this lack of union tradition, Volkswagen workers also exhibited substantial and extreme right-wing tendencies that they persistently expressed "by smearing the walls with swastikas and National Socialist slogans" that did not stop even after repeated reprimands. In 1947, the factory management and the Workers' Council made it abundantly clear in a joint memo that spreading Nazi propaganda endangered "the good reputation and the future" of the Volkswagen factory and would not be tolerated under any circumstances. The department managers were obligated to closely monitor this development and to immediately report and file charges against offenders. Such a demand, however, was hardly suited to changing ideological tendencies.[201]

The high turnover rate combined with the widespread anti-democratic attitude was the main reason that the Workers' Council lacked support from the staff and appreciation for its achievements. Instead, the employee representatives found themselves in a rather defensive position in relation to the vast majority of the staff. Their weak position was also reflected in the turnout and consequent results of the elections for the Workers' Council, and it really stood out in the first election in November 1945. Only 62 percent of the workers participated, 20 percent of whose ballots were invalid. Although the apolitical campaigns of the largely unknown candidates perhaps played a role in the low turnout, it was primarily due to a lack of interest in the activities of the Workers' Council, which had various causes. Some regarded their employment in the Volkswagen factory as a short-term affair; others were uninformed about the function of the Workers' Council or kept their distance on account of their political opposition. Thus, the invalid ballots can be interpreted as a protest vote, expressing disapproval of the Workers' Council's efforts.[202]

Providing for the Staff

Even for the first elected Workers' Council members, improvement of provisions for the workers drove the agenda, even though the council at first had no influence on the distribution of food and clothes. Food was rationed, with extra rations for those who performed more physically demanding work. Little was given to those responsible for light activities, but additional rations for heavy and extremely heavy labor could be substantial. Because the foreign relief supplies did not arrive, the already meager rations were reduced once more in March 1946, so that the norm was only 1,014 calories per day. Münch complained to the Hanover "Landesernährungsamt" (State Nutrition Agency) about the serious signs of physical decline in the Volkswagen workforce.[203] In July 1946, the "Wirtschaftsgruppe Metall" was founded as a branch of the General Trade Union, which aimed to improve provisions for workers. The most important demands it made were to increase the fat rations and to involve the trade unions in controlling food production and distribution. The Workers' Council of the Volkswagen factory worked hard to get these demands fulfilled, and by November, 73 percent of the workers were receiving extra rations.[204] From the end of 1946, the Workers' Council was entrusted step by step with supply tasks. It practiced a distribution policy appropriate to an economy of scarcity, which was not about improving income but rather primarily about obtaining food and vital consumer goods. The Workers' Council was involved in assigning extra rations; it took control of the factory kitchen, in order to prevent the embezzlement of food; and it handled the procurement and distribution of clothes, shoes, and other household items. Furthermore, it initiated a "social operating assistance" program that made repairs and manufactured everyday household items from May on. Because of the high turnover rate, the council found itself forced to make seniority the main criterion for the distribution of scarce goods by midyear. At the beginning of 1948, the minimum period was increased from three months to one year, which new hires probably perceived as discrimination and in case of doubt blamed on the council.[205] In the end, the distribution of scarce goods proved to be a thankless task. Whoever distributed things in short supply would sooner or later be accused of nepotism, for the other side of the distribution matter was that it favored political patronage.

Worker at the Gate

Despite the system of extra rations, undernourishment and deficiency symptoms continued to be a virulent problem among the workforce. In the fall of 1947, the daily rations in Lower Saxony were set at 1,653 calories for the norm, 1,790 for those who performed some heavy labor, 2,443 for regular heavy laborers, and 3,041 for those with the heaviest labor. A study conducted by the Public Health Branch in November examined 773 male and female factory workers – of whom far more than half got additional food from black market deals and bartering or from their own gardens. The doctors found insufficient calorie intake among them. The average weight was 58.4 kg for men and 49.1 kg for women. The 221 heavy laborers who were examined were by no means in the worst shape compared to earlier surveys. It was primarily those receiving normal rations who were extremely undernourished.[206] Things only noticeably improved for the workers with the foreign exchange bonus of RM 44,000 that accrued from the export business. An amicable arrangement made between the factory management and the Workers' Council stipulated that half of this sum would be used to provide workers with food and clothing, while the other half would be used for the reconstruction of the plant.[207]

Material Advances for the Workers

There was little leeway for improving the income of Volkswagen workers until the currency reform because the Allies had imposed a wage and price freeze. The Workers' Council used this freeze to achieve small gains in wage policies. One such gain was the regulation negotiated in the summer whereby young workers under age 21, as well as women who were paid piecework rates, received the same pay as male adult piecework employees.[208] In October 1947, the Labor Ministry in Hanover approved the wage increase for young workers as well as the financial parity of women who performed the same labor as men. However, the agency rejected a general wage supplement. The talks in Hanover disclosed that the council, in agreement with the factory management, had got round the wage freeze by regrouping the employees. In comparison to average earnings in 1946, the Ministry officials determined that wage groups 4 and 5 had experienced a shift upward. While the agency tolerated this, it did warn Chairman Peter of the Workers' Council that a general wage increase violated the wage freeze that was in effect.[209]

The Council's approach to the changeover to piecework rates introduced in the summer of 1946 also determined the prospects for income gains. This conversion was implemented over a period of several years. The management argued that those affected would, on average, earn more rather than less. Of course, this calculation could only be accurate if fewer workers actually produced more doing piecework. The council did not generally reject this switch and declared that it was prepared to familiarize employees with the principle of group piecework. Yet it also pointed out that some departments were more likely to experience production gains if individual piecework rates were implemented.[210] In addition, the representatives were concerned that group piecework might lead to injustices because "for one bad worker, all the others would have to atone." Regarding this as a temporary problem, Brörmann emphasized that the "weeding out of bad workers" by the staff itself comprised a most welcome side effect of group-oriented performance pay.[211]

It was not pay raises but decreases that motivated the Workers' Council when it supported the factory management in shifting workers from non-production to production jobs.[212] For the management, this change in work organization was geared toward cost reduction whereas the Council saw it as an opportunity to appoint employees in accordance with their professional qualifications. It encouraged the factory management to put as many men as possible in the right place, although it also insisted that transfers should

not lead to pay reductions.[213] An estimated 400 workers in the production departments were not in jobs that matched their qualifications and performed less valuable tasks. The Personnel Department felt that the problem could best be resolved by increasing production. This would raise the demand for higher-order jobs while positions in the lower wage classes 1 to 3 could be filled with new unskilled laborers.[214]

Whereas the food crisis in the winter of 1946/47 triggered a nationwide wave of strikes and demonstrations – in the Rhine-Ruhr region, Hanover, and Brunswick alone more than 1 million people participated – the Volkswagen factory survived this crisis-prone period without any large protests among its workers.[215] This was because the refugees and released prisoners of war were dependent on the social benefits of the company, and especially on the factory-owned housing, which dampened their willingness to go on strike.[216] In addition, the factory and the city were spared the worst effects of the food catastrophe thanks to the agrarian surroundings and its own cultivated land in the Mörse and Wolfsburg farmsteads. In all of Germany and especially in the Ruhr district, this crisis drove people into the streets for "hunger marches."[217] Only the staff of the satellite factory joined in the general strike movement in April 1947, whereupon Münch stood up for the Workers' Council in Brunswick and calmed the waters in the Military Government. In December, after the satellite plant's staff had once again participated in a protest strike, the matter was discussed. It had been triggered by the sentencing of two former SA men, which many unionists and Council members regarded as too mild. General Manager Münch then got in touch with the secretary of the Council, Fritz Hesse, and intimated that a strike "could have a very disruptive effect at the moment," particularly since the British had unconditionally demanded that production in December be raised to 1,000 vehicles, including overtime, to achieve this target.[218] Hesse and Münch agreed that the strike had to be prevented. The Council intervened in the satellite factory, after which the workers spoke out against participating in it. That very same day, Münch lifted the strike warning for the British factory management.[219]

The Participatory Company Agreement

In Münch, the Workers' Council had found a cooperative partner who strove to create regulations it consented to just as much as he honored its compliant course. This good cooperation was reflected in the company agreement negotiated between February and May 1947, for which Control Council Law No. 22 concerning the co-determination of works councils served as a guideline. This new agreement went into effect at the same time as the new work rules on May 10, 1947, securing the council full rights according to the Allied Works Council Law. These included co-determination for appointments and dismissals, for transfers, wage and salary questions, as well as for changes in operations. Further, it oversaw the factory kitchen and the distribution of foods grown in the factory's own farmsteads. Moreover, the company agreement granted the council the rights of participation in setting the production plan and access to business files.[220]

The "10 Grundsätze für die Arbeit im Volkswagenwerk" (10 Principles for Work at the Volkswagen plant) that were placed before the work rules, however, revealed the continued effect of the DAF tradition. Clearly reflecting the company's ideology of the "Betriebsgemeinschaft" under the Third Reich, the drafters of this document characterized "all the work in the factory" as a "service to the Volk for the use of the whole," the workers and officials as "a closed, democratically led performance group," and concluded by declaring that "Acting against peace at work and lack of discipline toward the company community's will to perform" was to be energetically combated. These principles demonstrate that allusions to the national importance of the Volkswagen factory forced sociopolitical conflicts of interest into juxtaposition.[221] For the council representatives, the company agreement nonetheless represented a step forward, particularly since it validated their demand for the right of co-determination for appointments, dismissals, and for transfers to higher wage groups instead of just giving them the right of consultation as the factory management had suggested. Münch described this concession as a "test of [their] democratic sensibility."[222]

Determining who would sit on a future Board and who to appoint as a personnel relations officer was not part of the company agreement. To the Workers' Council or union, a desirable answer to the open question came in the equal co-determination instituted in the Rhine-Westphalian iron and steel industry in March 1947. Yet the British Military Government rejected the decision made at the company assembly in November 1947 demanding that a labor director be appointed. On the one hand, this was because worker participation in company management did not fit the Anglo-Saxon model of industrial coordination of interests. Accordingly, the British argued that no one could represent management and workers at the same time. The task of the council, they maintained, was to tune in to the workers' interests whereas the labor director, as a member of the factory management, had to defend the interests of the company. On the other hand, the British regarded themselves as only temporary custodians and did not want to solve this central question for the future company management.[223]

Payday

Erosion of Company Co-determination

Nordhoff, too, who took up his position as the General Manager on January 1, 1948, was strictly opposed to appointing a labor relations officer.[224] Less oriented toward gaining the Workers' Council's consent than his predecessor had been, Nordhoff forged a tight alliance with the staff from the beginning with his paternalistic leadership style, following his firm conviction "that there is no more natural alliance than that between a factory's management and its workers."[225] The ongoing influence of the Nazi ideology of a company community that could still be discerned across large swaths of the staff reinforced his idea of leadership and helped him to assert his claim to power. On the other hand, the weak position of the council in the workforce was further undermined, even though the currency reform and the suspension of the wage freeze that followed had set the stage for advances in wage policy. Already in April 1948, the company management and the council agreed on an average wage and salary increase of 15 percent, which went into effect on September 1.[226] In the lower wage groups, the representatives had been able to negotiate income improvements of up to 50 percent.[227] Yet these successes in wage policy, which raised the level of wages at the Volkswagen factory far above the West German average, did not strengthen the basis for the legitimacy of the Workers' Council and the union. Rather, a large number of employees attributed these increases to the effect of the General Manager while the council felt pressured from two sides and found itself headed for a serious crisis of confidence.

Thus, the Workers' Council elections in June 1948 were marked by caustic partisan disagreements as the Social Democratic majority in IG Metall, in contrast to previous practice, put forward a list filled primarily with its own members. This led to another, opposing list being set up that presented the CDU and KPD candidates together with nonpartisans. The campaign turned into a regular mud-slinging battle in which the participants accused one another of corruption.[228] In addition, the growing influence of right-wing extremist candidates subjected the Council to a difficult acid test. In the elections of 1948, a grouping appeared for the first time that perceived itself as a union opposition list. These forces were boosted by the outcome of the municipal elections in November 1948, which had delivered a landslide victory to the aggressively revisionist, right-wing nationalist "Deutsche Rechtspartei" (DRP) with 64 percent of the vote. The ability of right-wing extremism to mobilize the protest potential that resulted from the precarious living conditions demonstrated the failure of political integration in this phase in the refugee city.[229]

Wolfsburg's election results were part of the first wave of election successes for organized right-wing extremism, which was able to profit from the economic and social dislocations of the postwar years. In the first parliamentary elections of 1949, the right-wing extremist parties received a total of 1.4 million votes (5.7 percent). More than a third of these were for the DRP. Founded in 1946 as a gathering place for various streams of thought, this party won 5 seats in the Bundestag and was particularly successful in Lower Saxony, where it got 8.1 percent of the vote; nationwide, it got only 1.8 percent. Shortly thereafter, the neofascist wing left the DRP, founding the "Sozialistische Reichspartei" (SRP, the Social Imperial Party) in October 1949 – in 1951, this party still won 11 percent of the votes in state parliamentary elections in Lower Saxony.[230]

Given the outcome of municipal elections in Wolfsburg and the mood of the workforce, which did not bode well for the approaching Workers' Council elections in May 1949, both the IG Metall and the German Office Workers unions made room for six right-wing extremist candidates on their common list – five of these were then elected to the council. This strategy aimed to neutralize oppositional forces by integrating them; measured by the election results, it was a success. None of the groups hostile toward the union were able to get their candidates elected, which may have been helped by the prohibition of the DRP that had been issued in the meantime.[231] Yet this strategy was, in the end, a sign of weakness, and it exacted a heavy toll – the representatives had to accommodate the growing acceptance of right-wing extremist candidates and their increasing influence on the council.

In addition, the council had to deal with accusations of corruption leveled against its chairman, which led to his ouster in November 1949. In retaliation, Peter publicly aired his grievances, encumbering the entire council. Once personal motives were taken out of the conflict, then what remained was a gray zone in which the borders between cooperation and corruption were apparently fluid. The

Social Democrat Ernst Rahm then took over for Peter as the chairman, and Helmut Hillebrecht was elected to be his deputy. Hillebrecht, for his part, had co-founded the SRP, which would be declared unconstitutional in 1952. The Workers' Council, which had fallen under suspicion of corruption, reached its nadir at a general assembly held on December 23, 1949. There, those in attendance, on the urging of a right-wing extremist spokesperson, dismissed the council by a vote of no confidence.[232]

The council's dismissal came at the end of a development that had begun with the shift to Nordhoff's leadership and the growing influence of right-wing extremist groups. Thereafter, council backing rapidly dwindled among the workforce, reducing its options for representing the workers in a confident way that made aggressive use of its right of co-determination, even though the company agreement had opened up this possibility. Last but not least, the fact that labor relations under Nordhoff regressed to a "kind of industrial feudalism" was due to the council's aversion to conflict; it was integrated into the role prescribed by Nordhoff's paternalistic style.[233] For most members of the council, Nordhoff was untouchable. For example, when the managing board of IG Metall sent union secretary Sührig to Wolfsburg in 1949, and Sührig started on a confrontational course with the General Manager, the council members rejected this strategy, and afterwards, declared their loyalty to Nordhoff. This reflected the ongoing influence of the idea of a "Betriebsgemeinschaft."[234] Not until 1951 when the Social Democrat and unionist Hugo Bork took over the chairmanship of the council did the workers' representatives begin to define their role anew. Then, the council engaged in an offensive campaign concerning distribution policy while growing prosperity laid the groundwork for democratic principles to become established among the Volkswagen workforce.[235]

3.4 Erratic Production

Material and worker shortages limited the volume that the Volkswagen factory was able to produce in 1946/47, which is why output stayed at the 1,000 vehicles a month despite British support and the tremendous efforts of the factory management. At the same time, the serial production that began in December 1945 booted up quickly. In early 1946, manufacturing shifted from the Type 51 to the Beetle with a normal chassis. In March, the workforce and factory officers came together to celebrate the one-thousandth Beetle rolling off the line.[236] In addition, production in this month finally achieved the requested quantity of 1,000 vehicles. The rapid rise in quantity fueled optimism among the British custodians, so that they set a target of increasing production to 2,500 vehicles a month by the end of the year in May 1946, with a view to exporting 1,500 of them.[237]

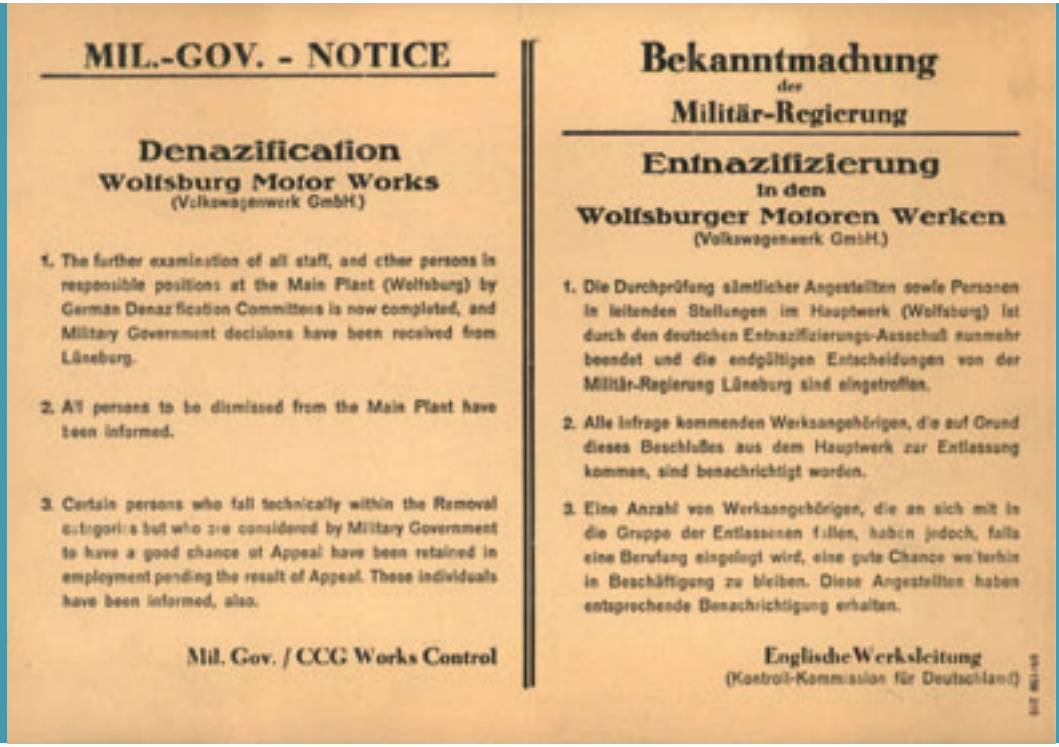
Celebrating the 1000th Volkswagen Rolling Off the Assembly Line in March 1946

That this intended increase in production triggered more concern than encouragement, not only among the factory managers, became clear in a discussion held on June 21, 1946. Even Officer Berryman, who was in charge of production issues, expressed his doubts that this could be achieved and asked that the poor condition of the machine tools and the workforce and nutritional situation be taken into consideration. Brörmann pointed out the difficulties in toolmaking, in machine repair, and in the general maintenance of the factory. In addition, he reminded the British of the war damage that still had to be taken care of in order to move toolmaking and assembly from the lower level into the hall and to meet winter preparation needs. Brörmann calculated that 2,000 additional workers would be needed to meet the new goal, and, according to the personnel management, the 1,000-vehicle plan was already causing serious problems because of the high turnover rate. Neither the Military Government nor the employment offices could meet the need for workers because the Volkswagen factory was on too low a priority level. An acute housing shortage continued to plague the area. Moreover, there were not enough clothes, work suits, or shoes for the workers, particularly for new hires. Although the Board of Control remained optimistic, it did postpone the plan to reach a monthly production rate of 2,500 vehicles to 1948.[238]

The British promptly ordered the first step to expanding production and set the 1,500-vehicle plan to begin in August. The Volkswagen factory's ability to fulfill this order depended decisively on the necessary quotas of steel, textiles, and glass being made available. The lag time for delivery of resources was several months – up to three months for steel plates and up to five months for textiles and manufactured powertrain elements. Despite the factory's preferential treatment, quotas were occasionally delivered late, and material shortages prevented suppliers from meeting the factory's needs, except intermittently. The Purchasing Department then also raised its voice against the August plan because the quotas of textiles and glass that had been delivered had been set for 1,000 vehicles. The wheel rims manufactured by the Kronprinz company that had been released only sufficed to produce 800 vehicles a month, and the iron vouchers for the third quarter that were so desperately needed had not yet arrived. The Purchasing Department manager Julius Paulsen made a sobering calculation: Although the scarce steel plates would last until the end of September if 1,500 vehicles a month were made, the new plates would not be available before the middle of October. If the plan were to be executed, then early October 1946 would see shortages in several production areas.[239]

Aside from these supply issues, the ordered increase in production was problematic from a sales perspective as well because it drove up manufacturing costs and ran counter to the British demand to reduce costs. Kemmler made the commanding factory officer aware of this point in early August 1946, also expressing his fundamental criticism of the British production policy, which, in his view, failed to take what was possible at the factory and the prevailing economic conditions into account. For, as Kemmler remarked, the best planning would have to be wrecked "if the technological management is forced by the directions sent by British offices to continue to focus its attention on more or less forcibly achieving the production goal without the necessary requirements for this having been met."[240]

As Kemmler explained, when on a given workday from time to time, production was faced with an insufficient supply of parts – say 150 parts missing or only available in inadequate numbers – then the manufacturing plan of 1,000 vehicles a month could only be achieved by means of clever improvisation. Machine utilization plans had to be altered, workers had to be switched out, and the replenishing of supplies had to be rearranged. Consequently, there were delays on the assembly lines, and the Transportation Department often had to bring individual parts piece by piece to the processing machines. The high turnover rate made the situation even worse in that new workers had to be trained and integrated into the production process. For July 1946, Kemmler estimated that the loss of productive time caused by turnover was almost 51,900 hours out of a work quota of 123,700 hours. He suggested that the manufacturing program be put off for a month to allow a little breathing room for the planning and necessary preparatory work to be completed and to create a stockpile of components and replacement parts that would cover at least 14 days of production, but his idea was rejected.[241]



MIL.-GOV. - NOTICE

Denazification
Wolfsburg Motor Works
(Volkswagenwerk GmbH.)

1. The further examination of all staff, and other persons in responsible positions at the Main Plant (Wolfsburg) by German Denazification Committees is now completed, and Military Government decisions have been received from Lüneburg.

2. All persons to be dismissed from the Main Plant have been informed.

3. Certain persons who fall technically within the Removal categories but who are considered by Military Government to have a good chance of Appeal have been retained in employment pending the result of Appeal. These individuals have been informed, also.

Mil. Gov. / CCG Works Control

Bekanntmachung
der
Militär-Regierung

Entnazifizierung
in den
Wolfsburger Motoren Werken
(Volkswagenwerk GmbH.)

1. Die Durchprüfung sämtlicher Angestellten sowie Personen in leitenden Stellungen im Hauptwerk (Wolfsburg) ist durch den deutschen Entnazifizierungs-Ausschuß nunmehr beendet und die endgültigen Entscheidungen von der Militär-Regierung Lüneburg sind eingetroffen.

2. Alle infrage kommenden Werksangehörigen, die auf Grund dieses Beschlusses aus dem Hauptwerk zur Entlassung kommen, sind benachrichtigt worden.

3. Eine Anzahl von Werksangehörigen, die an sich mit in die Gruppe der Entlassenen fallen, haben jedoch, falls eine Berufung eingelegt wird, eine gute Chance weiterhin in Beschäftigung zu bleiben. Diese Angestellten haben entsprechende Benachrichtigung erhalten.

Englische Werksleitung
(Kontroll-Kommission für Deutschland)

Notice of the Second Denazification Process, June 1946

The Second Round of Denazification

Aside from the economy of scarcity, the second wave of denazification, which got going in June 1946, also negatively impacted production at the Volkswagen plant for a while. Bolstered by Directive Number 24, which had been passed in January and aimed to make denazification practices in the Western zones somewhat uniform, the denazification commissions, stoked from the German side, dealt with more than 1,000 personal cases. A total of 228 Volkswagen workers were dismissed for their involvement with the Nazi Party, including four department heads, the technical manager, one operations manager, and the factory manager Brörmann.[242] The British appointed Münch to be his successor on June 17, 1946, whereupon Münch simultaneously held both the office of the Chief Custodian and the General Manager.[243] On June 20, 1946, reports on company morale that Hirst had requested painted a rather gloomy picture of the effects of denazification on production and the workforce. In the already tight personnel coverage, the dismissals had opened severe gaps in some departments. The toolmaking, welding, mechanical, body assembly, and planning departments were hit particularly hard. The Planning Department lost eleven people, including three who were "difficult to replace even in normal times."[244] Production manager Karl Huland expect-

ed a significant drop in the number of vehicles produced because workers with years of experience at the factory could not simply be replaced without further ado. In order to prevent even worse disruptions in production, Hirst permitted some key personnel to continue working while the trials were being conducted. Yet this measure could not keep production – which was also affected by the factory holidays – from dropping to 422 vehicles in June 1946. The goal for July could then only be achieved according to the factory manager if the 10 to 12 top performers removed by the denazification process could be reinstated.[245]

The effect of denazification on the morale of the workforce was, likewise, a cause for concern. Brörmann suspected that toolmaking machines were breaking down rather frequently because workers were sabotaging them to express their frustration with the way denazification was being handled.[246] Münch noticed a growing agitation among the workers prompted by their "absolute uncertainty about their own future." The workers, he surmised, feared that the very existence of the factory was being undercut. According to the reports of department heads, the enthusiasm for work displayed in March and April had "given way to a very strong weariness and depression."[247] Thus, it was doubtful, they conjectured, that the performance of the preceding months based on the engagement of the entire workforce could be achieved again. It is difficult to say just how much the denazification of management personnel impaired the reorganization and management of the company or the quality of its products. Hirst had appreciated Brörmann as a technical expert, and the latter's dismissal left a noticeable gap that could only be filled by appointing Nordhoff. The effects of denazification on the volume of production, however, were, in the end, limited and temporary as the Military Government approved 138 of 190 appointments undertaken.[248]

Despite denazification and worker and material shortages, monthly production rose to the highest level of the year in August 1946 to 1,223 vehicles, but it dropped back down to about 1,000 cars in the following two months. Above all, the scarcity of steel waylaid the British production plans. The persistent power outages prevented the steel mills from holding to their delivery deadlines; the Ohler Ironworks as well as the Iron and Smelter Works of Bochum reported delivery delays of three to four weeks. The rationed supply of power led the Continental company to limit its production so that the reserve supplies at the Volkswagen plant were used up at the latest by December 1946. Although suppliers were making a great effort, the Reichsbahn (Imperial Railway) did not make enough train cars available. And often, train cars carrying important materials did not arrive in Wolfsburg because they stood for days in repair shops. Consequently, the Volkswagen factory had switched from train to truck transport.[249]

Production Standstill in the Winter Crisis of 1946/47

The number of vehicles produced rose once again to 1,193 in November before the upswing came to an abrupt halt in December 1946. In this, the Volkswagen factory shared the fate of all industry located in the British-American area. There, the economic situation had made respectable strides when industrial production collapsed in the energy crisis of the winter of 1946/47. Problems mining coal were not the chief cause of the acute shortage as the crisis immediately followed on a turn to the better in the industry in October 1946. An internal Volkswagen memo had noted that large quantities of coal were available.[250] However, the consequences of the Allied air raids were now making themselves felt after some delay, particularly since the extremely cold winter blocked all waterways, concentrating all product transportation in the Imperial Railway. The ruined train system collapsed, crippling the delivery of raw materials and intermediate goods.[251]

The Board of Control met to discuss the consequences of these failed raw and other material deliveries on December 6, 1946, and decided to halt production until the new year. When production started up again in January, the plant would then manufacture 500 cars. This brief standstill alone generated costs of 1.5 million Reichsmark; when an acute coal shortage halted production once again before it had really even begun, these costs rose still further. By January 6, 1947, the factory's coal supply had dropped to 500 tons, which was not even enough to cover the energy needs for two days at the previous production levels. New coal for production was nowhere in sight. The almost 700 tons delivered by the Northern German Coal Distribution Center had to be used for the set purpose of keeping the factory running and securing emergency heat and light for the city. Meanwhile, the temperature had dropped in some of the factory halls to -7 degrees Celsius, so that laborers could not be kept working out of consideration for their health. Moreover, the frost crippled the machines; some of the welding machines had already frozen. Production remained at a standstill until March 10, 1947.[252]

The crisis put a damper on the British production plans. Thus, the relevant control agencies used previous production figures for orientation, deciding on March 18, 1947, that at least 1,000 vehicles should be made for the Allies in the next six months. After that, factory output was to be increased to 2,500 vehicles by July 1948 so that, once the Allies' diminishing needs were met, the remaining vehicles could be released for the German market and for export.[253] The Industry Division brought a discussion paper on this topic to the deliberations of the Bizonal Economic Commission in March 1947. The negotiations, the main purpose of which was to secure maximal vehicle production in the unified zone, gave the

Axle Assembly

Volkswagen factory – whose future had still been uncertain – a stable material foundation. In effect, the talks unofficially gave the automobile industry priority. The bizonal powers reached this decision at the Moscow Foreign Ministers' Conference in April 1947, but, out of consideration for the French, they did not officially announce it until the end of August 1947. The new plan for the level of industry in the bizone – which was probably a done deal even before the zones were joined – was oriented toward the economic indicators of 1936. It raised the level of German steel production from 5.8 to 10.7 million tons and the number of vehicles allowed to be manufactured for Germans from 40,000 to 160,000.[254]

On July 23, 1947, Hirst shared the good news with the factory management that it was "almost safe to assume that the removal of the factory [was] out of the question."[255] He added, however, that the Volkswagen plant would remain under British control until a government for all of Germany could be formed. That goal was more unattainable than ever. At the Moscow Foreign Ministers' Conference in 1947, unbridgeable oppositions in the positions of the Western powers and the Soviet Union had emerged regarding how the question of Germany should be handled: the "Cold War" now broke out.[256]

Conflicts between the Germans and the British

After operations had started up again in early March 1947, the awful production conditions got much worse because of two opposing developments. While supplies of raw and other materials grew noticeably worse, the VAW was goading the factory management to increase production to supply the German market. The Board of Control consented to this provided the Volkswagen factory meet its production obligations for the Allies and the VAW allocate the additional rations. The British were also interested in expanding production as quickly as possible in order to get the export business up and running within the year. But in light of the prevailing scarcity of materials, it rapidly became apparent that the interests of the British custodians and the VAW could not easily be balanced. This generated conflict.

At the production meeting in early April 1947, Hirst expressed his reservations about the planned program. On the urging of Fritz Wenk, the manager of the VAW Division "Fahrzeugindustrie", the factory management had set its sights on manufacturing 1,250 vehicles that month. Hirst pointed out problems in procuring metal sheets and warned that material shortages might bring production to a standstill. General Manager Münch placatingly replied that Wenk had firmly promised to procure the additional material rations that were needed.[257] Nonetheless, the increased production wound up generating a large number of repairs. As a result, the factory management was directed to compensate for the repair backup that had forced a production break at the expense of British vehicles and to refill the spare parts stocks for REME. Because the managers had neglected this high-priority task, factory officer Neal reminded them of their obligations. In an order on April 24, 1947, he made it clear that raising production above 1,000 vehicles a month was not allowed to reduce the supply of spare parts.[258]

A good distance from the set production goal, 1,055 Volkswagens left the factory's assembly hall in April 1947. Of these, five were delivered to the supply center of German mining, which had commissioned 600 vehicles. Fifty vehicles from the production overflow were set aside for suppliers, and this intention had been announced in order to keep up supply chains – which were increasingly shaped by bartering – for indispensable materials. However, the factory management had been forced to make use of British materials in its civil manufacturing as neither the supplies to produce vehicles for German mining nor those for the German market had been delivered. Making matters even worse was the fact that weeks sometimes passed between steel arriving at the mill and the delivery of the plates, depending on how busy the companies were and the number of power shortages, which continued to increase.[259] At the beginning of May, the VAW was informed of the present danger of a material gap. Bridging it would be difficult because getting the authority to do so would take a lot of time. Wenk ordered the Purchasing Department to procure plates by means of a one-time initiative and promised his full support.[260]

Meanwhile, the British had put a stop to the delivery of the fifty cars to suppliers. The Military Government retained possession of them and planned to keep them until materials to produce cars for the German market had arrived. Hirst severely criticized the factory managers for having acted on their own authority. In a meeting in early June 1947, he reminded them that the shape of the production program and the release of all vehicles were to be discussed and decided "at this conference table." Neither German nor external British agencies had the authority to give orders, he said. Moreover, Hirst made it clear that vehicles for the German market or for export were only to be manufactured after the plates and materials for them had been supplied. Any and all use of British materials for this was strictly prohibited. But even with all this criticism, the Board of Control was interested in increasing the production plan above 1,000-vehicles-a-month and in using rations allotted by the VAW with the proviso that production overflow would also be available to the military, and that they would not have to settle things with those entitled to the rations until their materials had arrived at the factory.[261]

The "Landwirtschaftsamt Niedersachsen" (Department of Agriculture of Lower Saxony) then added another order for 1,580 cars to the mining commission. This meant that the Volkswagen plant had consumers for 2,180 vehicles over the number it was obligated to manufacture, although this number vastly exceeded its capacity.

During a discussion in June 1947, Wenk called for binding figures for monthly production through the end of the year after the Volkswagen plant had to reduce its anticipated production overflow from 4,000 to 2,300 vehicles. General Manager Münch, however, did not believe that he was in a position to provide reliable figures on the progress of production, pointing out, among other things, the acute workers shortage brought about by the sudden departure of 300 Latvian laborers. In consideration of these conditions, Wenk regarded orders at the Volkswagen factory as untenable and threatened to direct all consumer contingents to the Daimler-Benz and Opel companies.[262]

The Volkswagen factory certainly did not need to complain about a lack of orders in mid-1947. But the rising demand coincided with worsening material supplies. Reduced distributions of raw materials and power shortages – which amounted to 40 percent of the time at the mill on average – made themselves felt among the suppliers as well, seriously disrupting the renewal of supplies. The situation for the Purchasing Department became more severe because suppliers refused to hand over their wares without compensation. Because the company could not keep its promises, the suppliers engaged in a noticeable "passive resistance." Some of them demanded the vehicles they had been promised daily. The nearer currency reform came, the more the overvalued Reichsmark degenerated into mere paper. A barter economy spread, and many scarce materials could then only be procured by barter transactions.

Through a quiet agreement made with the "Hauptverwaltung Straßen und Verkehr" (Head Office of the Streets and Traffic Department) in Bielefeld, automakers like Daimler-Benz, Opel, Ford, and Büssing were allowed to pass five percent of what they produced on to their supply companies. This counted for more than the Volkswagen factory's "mandatory priority," which had even less of an impact on suppliers. The VAW announced that it could not allocate raw materials because no more were available. Besides that, the priority rating did not apply to the manufacturing industry nor was it sufficient for the steel industry to have any special consideration. For example, for the allocation of textiles, acceptance of the priority rating was tied to the number of pieces to be produced, the entire material value of which the Military Government set in dollars. But the Military Government refused to pay for it because not all of the produced vehicles were intended for its own use.[263]

Barter transactions were not highly regarded by the CCG, although the Volkswagen was a very desirable object that could be exchanged for up to 150 tons of cement or 200,000 bricks. The CCG merely tolerated these half-legal practices against its will, although it was also swayed by the justified fear that the vehicles intended for trade would be manufactured from the materials meant for the occupation program. After several vain attempts, the factory management renewed its demand at the end of July 1947 to set a certain percentage of its production aside for the suppliers. The shortage of construction materials for winterizing the factory called for the greatest haste.[264] Pressured by the material crisis, Hirst approved the management's suggestion and gave the order in early August 1947 for used parts to be utilized to make 30 second-hand vehicles for suppliers as quickly as possible. Hirst simply had to accept the fact that new parts would have to be manufactured as well.[265]

The factory officer reacted in a much less conciliatory way to a reminder about the British quota for the third quarter. Paulsen said that, if it was not met in a short period of time and the Military Government nonetheless insisted on the delivery of 1,000 vehicles, then the contingents set aside for the mining company and the German economy would have to be used. Hirst replied tersely that the situation looked "serious for mining and the German economy."[266] Münch pointed out the mining company's right to take its vehicles, which Hirst parried with the threat that the cars could be commandeered.

Meanwhile, the steel supply was severely depleted. In July 1947, the plant had managed with great effort to produce 1,025 cars in the third quarter. This allowed it at least to supply the mining company with 25 cars for the allocated rations. As every last bit of some steel plates had to be processed in order to achieve this, different car body assembly lines had run out of supplies and stood still for several days at the beginning of August. This provoked the Senior Resident Officer to issue sharp reproaches and brought up the question of why production had not been slowed down sooner. In fact, the factory managers had firmly relied on new materials being supplied. But because there was no material buffer, the unexpected

and severe power outages of the last weeks had a noticeable impact.[267] The steel mills of Eichen and Ohle were among those affected by this, which, having received orders for the Soviet and French zones, had to rescind their commitment to Volkswagen. Because the development of raw material and energy provisions could not be predicted, Kemmler came to the conclusion that "any reasonable planning for increasing production in the next months" was out of the question.[268] As Kemmler recommended, production was slowed down to 800 vehicles in August 1947.

This did not impair the delivery to the mining company. At the start of September, the British freed up 25 vehicles for each of the supply companies and to the mining company. But the distribution system once again caused complications. On this point, Hirst explained that the distribution of contingents via the mining company had not worked properly and would henceforth be centrally managed by the "Landwirtschaftsamt".[269] In this tug of war, those at the supply center of the German mining company gradually lost their patience. At the end of September 1947, Münch approached them in order to prevent them from transferring the orders to Opel, as they had threatened, since the mining company was an important client for the future. To meet Volkswagen's obligations to the mining company, he instructed Steinmeier to exceed the margin of 1,000 vehicles if possible as early as October 1947.[270] But obviously, Münch had "not properly interpreted the situation," and Hirst implied that all back orders of the mandatory program had to be fulfilled before anyone else could get a car. In addition, the British officer criticized the autonomous promises made to the mining company and put the factory management in its place. What the Volkswagen factory produced, he pointed out, was divided up by agencies of the Allies; the company management did not have the authority to enter into negotiations with other institutions.[271]

Production Costs and Car Price

In addition to the difficulty providing cars to German mining that had to be overcome, the company management was also plagued by poor cost structure. Thus, Wenk had already remarked on the overly high price of the car several times and asked critically why the German people should pay for what the Volkswagen plant produced at too high a cost. Even Technical Director Steinmeier admitted that the Volkswagen was too expensive compared to the Opel and should cost no more than 3,500 RM.[272] This problem became acute when in August 1947 the pricing office of the Economic

Ministry of Lower Saxony set the price at 3,600 RM without discussing it with the Volkswagen plant. This "random price setting" was even too much for the British with their similar push to lower the cost, and Neal promised to personally take care of the situation. Yet the British Military Government had limited options for intervening as it had transferred the authority for price determination to the German agencies itself. With the support of the custodians, the German management succeeded at the final negotiations at the end of October 1947 in setting the price for the car coming straight from the factory at 3,910 RM. Wholesalers added a 15 percent margin so that the Volkswagen Beetle cost 4,600 RM retroactively to August 1.[273]

Even this regulation, measured by the October calculation of charging 4,270 RM for a car, required that the factory reduce its manufacturing costs by 360 RM per vehicle. To master this task, Chief Financial Officer Hiemenz issued a broad bundle of measures that aimed to reduce overhead: in transportation, storage, purchasing, inspection, and research, as well as in the production plant where Hiemenz spied opportunities to save, above all, on various overhead costs like non-production wages, salaries, repair materials, tool usage, and travel costs. Hiemenz expected the new organizational structure planned for January 1, 1948, to lower administrative and sales overhead by 10 percent. He also regarded cuts as necessary to reduce the company's energy consumption and to improve the cost-effectiveness of the power plant – it charged the offices 13 Pfennig per kilowatt-hour, almost twice as much as average in other branches of industry. Cutting the presumed profit, which, including investment returns, amounted to 8 percent, was out of the question for Hiemenz because the Volkswagen plant had to finance its extraordinary expenditures.[274]

The newly set car price made it urgently necessary to implement the cost reduction program. Otherwise, the factory would have to reckon with the ongoing depletion of its assets. But even when savings goals were reached, Hiemenz still believed that the greatest structural cost problem had not been solved. He felt that, in setting the car's price, the depreciation of the factory's capacity had been "taken so excessively into consideration" that production would have to be increased to at least 1,500 cars to prevent losses.[275]

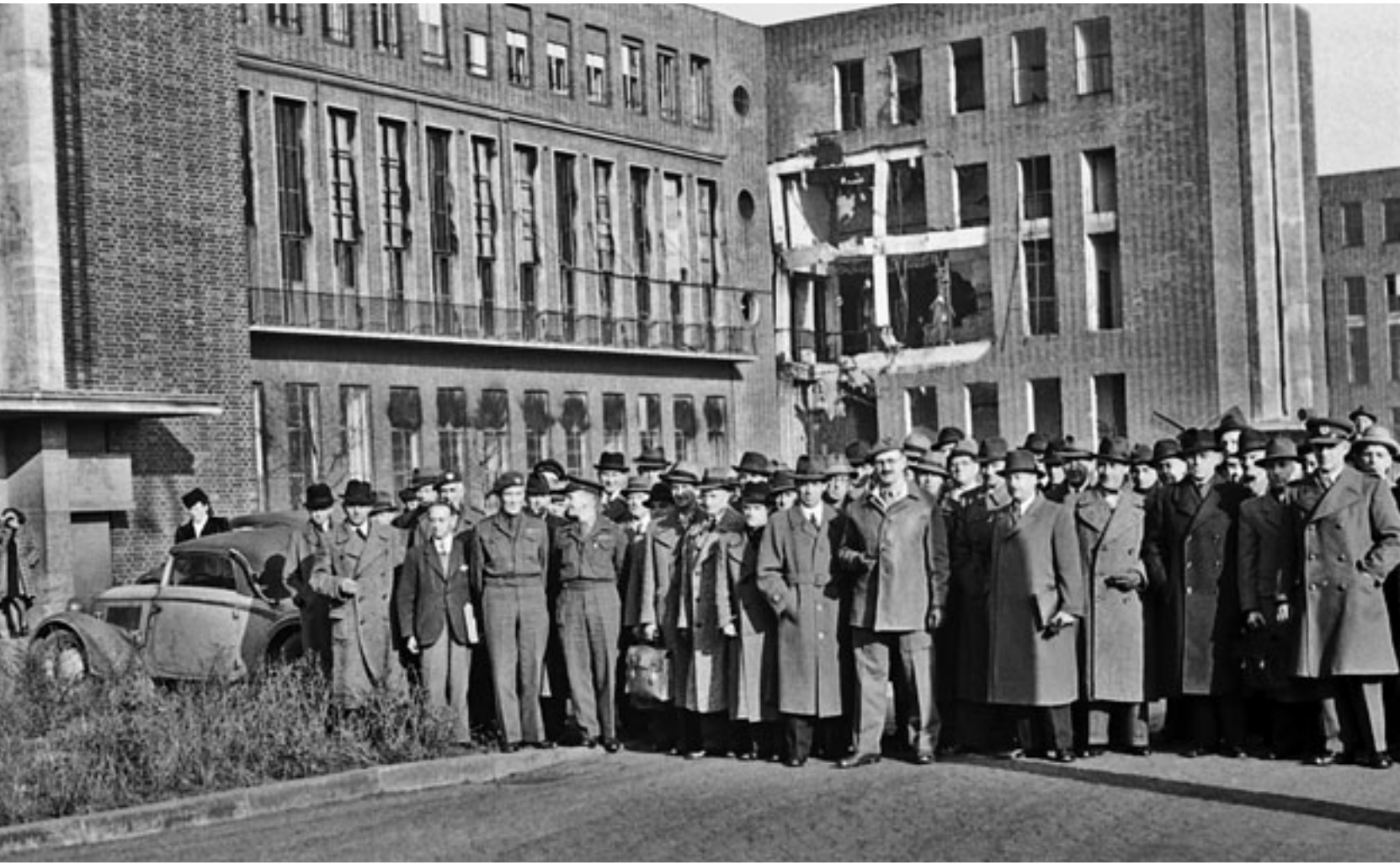
View of the South Street of the Factory Grounds
from the Power Plant

But there were limits to how much the plant's capacity utilization could be increased due to the economy of scarcity. Moreover, the experiences of the preceding months did not particularly raise hopes that rapid change would ensue. At least there was some improvement in the supply of vendor parts because the British had pragmatically adapted their restrictive stance on bartering to the economic reality. In mid-November 1947, on the condition that production for the Allies not be impaired, the Board of Control permitted a limited number of vehicles to be delivered to the supply companies to maintain good relations between them and the Volkswagen factory. As Type 11 could not be delivered, the Board considered providing them with used cars, display and test cars, as well as with vehicles assembled from the auto bodies and chassis rejected in inspection. Before handing them over, the factory management had to obtain final authorization from the Board of Control and provide it with a monthly report on these sorts of sales.[276]

1947 was a difficult year. Material and worker shortages kept production at the level of the previous year, far below what the civilian demand and quotas would have made possible. Only 583 vehicles flowed into the domestic market. Of the 600 vehicles commissioned by German mining, only a small portion was delivered by the end of the year. The Reichspost (the German Imperial Post Office) and the Reichsbahn, which had received a total of 300 cars the year before, got none in 1947.[277] Nonetheless, these major clients stuck with the Volkswagen factory as the competitors did not start up their production of personal vehicles until 1947/48.

The production disruptions in the second half of 1947 marked the most difficult stretch for the Volkswagen plant, after which the company continued to develop, as it had begun to do in 1946, into a commercial enterprise. Despite the material and worker shortages, it had managed to reorder production according to efficiency criteria and to reform its organizational structure. The British management had supported this process in word and deed, yet it had largely left it up to the German factory management to decide how to make these changes, even though Hirst had influenced the organizational structure established in 1946. The British also held on to the reins wherever the key areas required for the company's development into a commercial enterprise were concerned: products and clients. They focused on improving product quality and developing sales and customer service organizations for the domestic situation, that is, on precisely those areas in which the German management did not have much experience and where the British could direct the developmental impetus. However, they undoubtedly assigned the greatest importance to the export of the Volkswagen Beetle, which is why opening new channels of distribution in the not yet reconstructed European markets became the main objective of the entrepreneurs in uniform.

4. Courses Set by the British



4.1 Paths to the Customers

The Volkswagen factory was supported by only a rudimentary customer service structure when the Military Government placed the production order for 20,000 Beetles in August 1945. But the British set other priorities at that time. At the beginning of October, Hirst ordered the customer service repair shop in the factory to be closed, thus bringing repairs on civilian cars to a halt. Local repair shops were to take over the service for these vehicles, and the department "Kraftwagenpark" (Automobile Fleet) was to take care of repairs to the factory's own fleet. The Customer Service Department was instructed to make a list of spare parts for 100 Beetles because an order for the production of spare parts would be placed when serial production began. Hirst postponed appointing dealers or reopening the customer service repair shops to a later time, "when vehicles are made available for the civil demand."[278] Thus oriented toward the start-up of serial production, the Customer Service Department at first concentrated on coordinating the manufacture and supply of spare parts while the Customer Service Training Center instructed the Reichspost employees in the maintenance and repair of Volkswagens. In October 1945, Hirst appointed Karl Feuereissen to be the department manager – he had previously worked for the Auto Union and Porsche.[279] The REME repair shop supported the department as it maintained a customer service center for the British army.[280]

The starting signal for the development of a sales and service organization sounded in the summer of 1946 when the production increase demanded by the British also suggested that civilian sales would begin soon. Customer Service and the supply of spare parts were especially important to the custodians in view of the Beetle's market rollout. The German management, on the other hand, according to Hirst, had "very different ideas about Kundendienst [Customer Service] because they'd never operated a car company."[281]

The prospect of civilian sales triggered a hectic hustle and bustle in the Volkswagen factory. Under Feuereissen's leadership, the organizational preparations for the rapid development of a sales and customer service organization started up so that the Volkswagen itself would not fall into disrepute on account of poor service.[282] In order to be able to name main distributors and distributors for certain, firmly circumscribed areas in accordance with the terms of the Highways and Highway Transport Branch, the first thing needed was a thorough consolidation and reparceling of tasks. At the start of 1939, the German Labor Front had begun to develop a repair shop network. Up to 1943, contracts for customer care as well as the sale of spare parts were entered into with 243 central repair shops and 843 smaller ones. However, these shops, which were integrated into the Customer Service Department for Wehrmacht vehicles, were unable to fulfill their function because they lacked civilian vehicles for this task.[283] In the summer of 1946, the Volkswagen factory canceled the remaining shop contracts. This was supposed to prevent contractual partners who no longer satisfied the requirements from acting as Volkswagen dealers.[284]

Development of the Dealership Structure

In contrast to Daimler-Benz and the Auto Union, the organizational structure of Volkswagen dealerships followed the hierarchical system of central and smaller repair shops, applying it to the sales structure – particularly since the British favored the integration of a wholesale level.[285] The concept Feuereissen presented mandated the appointment of specific area representatives (main distributors) and subsidiaries that were to work as independent contractors. Because the volume of civilian sales was, at first, small, the customer service manager recommended that the sales network not be cast too narrowly to guarantee the livelihood of individual dealers. The Volkswagen Company was only to maintain direct business contact with the area representatives who would be responsible for delivery, customer service, and spare parts sales. The dealers were appointed jointly by the company and the area representatives who would supply, advise, and supervise the dealerships. The company reserved the right to deploy roaming inspectors to check up on them and influence the development of sales structures in line with its own expectations. On October 28, 1946, the Highways and Highway Transport Branch appointed 10 wholesalers and 28 subsidiaries for the British zone. In addition, an area representative was appointed for Berlin in early December 1946 that the Customer Service Department selected from three companies Hirst had named.[286]

The Volkswagen factory quickly took up contact with these largely new distributors, who numbered 46 by the end of 1946. The technical equipment, financial soundness, and reputation of these firms, including some unknown to Wolfsburg, were systematically scrutinized at the sites.[287] In August 1946, a mobile service unit was established that took over this task. Consisting of two engineers, who also trained the workshop personnel on site, they maintained contact with the British agencies and the German dealers. They not only advised the dealers in issues of maintenance and repair but also subjected them to strict quality controls. The early reports on visits to the dealers painted a picture of a rather provisional structure. The inspectors severely criticized the consequences of the economy of scarcity that made themselves felt in this context as well. Essen wholesaler Gottfried Schultz found this out the hard way in late April 1947: With suitable facilities, good machinery, and 160 to 180 vehicles to repair each month, his company held the leading position among the wholesalers. However, the inspection report indicated that "the work performed there could hardly be judged as average" and did not meet Volkswagen's requirements. This was attributed primarily to a lack of a qualified management for technical operations as well as insufficient supervision of the assembly on the part of the master mechanics and the foremen, respectively. Consequently, the inspector made small changes to the organizational structure and suggested reassignments within the workforce.[288]

The company Hülpert & Müller in Dortmund provided another example of insufficient organization. According to the inspectors' report, it failed to fulfill its role as a wholesaler – the entire district lacked "the most primitive requirements like spare parts lists, a sketch for making an advertising sign, technical and general communications, as well as newsletters about the factory, special tools, and spare parts supplies." The report named only one distributor as fulfilling the requirements in a way that would be workable with self-help and factory support. The summary was disheartening: "The company Hülpert & Müller in no way works in the manner we intend and foster. The demonstrated approaches virtually force the distributors to strive for independence. As this work method can be discerned among other central distributors, it seems to follow that involving the central distributors in caring for our brand is more obstructive than useful."[289]

Development of the Customer Service Department

Just like this external structure, the internal company structure shifted in anticipation of civil business. The Finance Department, which had been subordinated to sales up to this point, was annexed to the main division, Customer Service, at the end of 1946, and was moved to new offices. Customer Service was now subdivided into the Spare Parts Department, the Technical Department, and the Customer Service Training Center, which had inaugurated training programs in February 1946. In a large repair shop and training space in the lower level of Hall 1, there were training courses for Britons and Germans, namely, for employees of the Reichspost and the Reichsbahn, as well as for assemblymen of the contracted workshops. Due to increasing use, the customer service training center was moved to the "Südrandbau" (southern perimeter) and expanded in 1947.[290]


The Expert VW Driver
DER SICHERE VW FAHRER
· VOLKSWAGENWERK ·
CCG (BE)

The Technical Department informed the contract repair shops about improvements that had been made and sent a total of 24 "Customer Service Letters" in 1946. These outlined the technical and design changes along with repair tips. The Repair Handbook produced in 1947 provided a systematic guide to repair work that the Technical Department used to support customer care in the repair shops. For customers less versed in technology, the Technical Department developed an instruction manual of a new type that presented information exclusively in pictures: "Der sichere VW-Fahrer" (The Expert VW Driver). Probably the most important advance in customer service was the extensive fault catalog compiled from a monthly analysis of the warranty cases, as well as the consumer and customer service reports, which was available starting in 1947. Of the approximately 3,300 faults registered in the first half of the year, all the important ones were reported to the Technical Management in order to remedy them. A new service provided to the customers was a free customer service check of all new vehicles at the factory.[291]

The chronic undersupply of replacement parts gave the spare parts depot almost strategic importance. This was due, not least, to its manager, Schulz, who had run a repair shop during the war and was very familiar with situations of scarcity. His initiative was indispensable to the logistical development of the spare parts depot. Schulz put together a new edition of the spare parts catalog in German and English, 16,000 copies of which were printed and distributed in February 1946. He also introduced exchange components against Feuereissen's will. The number of tasks of the depot grew with production, already requiring greater differentiation in the following year. In 1947, two new subsections were added: the "Export-Verkaufsabteilung" (Export Sales Department) and the "Altteile-Aufbereitung" (Used Parts Processing Unit). In order to meet the rising demand for spare parts as quickly as possible, an assembly line for packaging and an electrical loading device for components were set up. These measures helped to make warehouse management more efficient. Yet even though spare parts deliveries to the customer service department doubled to 50,000 a month in 1947, these continued to be in short supply.[292]

The internal organizational structure for sales and service was completed with a customer service repair shop that resumed operation at the beginning of 1947. After initially finding it difficult to clearly delimit its tasks concerning vehicle repair and testing, it managed to close a significant gap and compensated for the insufficient customer service provided by some dealers. However, the factory's own repair shop was visited more often than the management liked. In one case, when a private vehicle was there getting a new engine, Münch asked the production managers why the customer did not go to the repair shop in Brunswick where he actually belonged. As such cases added up, Hirst struck a different tone in early December 1947: Every repair on a private vehicle at the factory, the British officer ordered, would lead in the future to investigations into whether the relevant dealer had fulfilled his obligations.[293]

Customer Service Training Center, 1950

As a countermove, the Volkswagen factory allowed its dealers to express their criticism so that a communicative exchange developed that benefited both sides. In a managerial meeting in mid-July 1947, General Manager Münch explained that the Volkswagen would have to hold its ground against competitors in the foreseeable future, so it was important to listen to the opinions of Volkswagen dealers concerning product sales. Wholesaler Schultz in Essen presented a list of spare parts that his company had completely run out of, including connecting rods, crankshafts, round bolts, steering gears, stub-axle bolts, and shift levers. On account of these unavailable spare parts, half of the Volkswagens at the Reichspost in Düsseldorf and Hanover were not running. Schultz presented various complaints from experiences in his repair shop. Each of his suggestions for improvement were discussed and passed on to the Technical Management.[294]

By mid-1947, the preliminary difficulties, such as those that arose in dividing up the sales areas, had been overcome, and the review of the wholesalers and their subsidiaries in the British zone had been completed. During this same period, the Volkswagen factory intensified contact with its dealers: On the one hand, it held regular meetings with them, providing information about current busi-

ness developments; on the other, it implemented district inspections in the British and French zones that the repair shops, as the direct contacts, supervised on site. Both of these measures contributed to the development of a trusting partnership between the wholesalers and the carmaker.[295]

Sales Channels in the American and French Zones

The forthcoming fusion of the zones prompted a rapid expansion of the sales structure to the U.S. zone. The British advanced in this direction when they met with Captain Phillips of the U.S. Army Exchange on October 18, 1946, and proposed that a sales network be developed in Frankfurt and the surrounding area. U.S. officers concurred and requested the names of the authorized distributors. However, the U.S. Military Government did not grant permission for the establishment of a sales system until 1947. Feuereissen stressed the urgency of this sort of measure by noting that Opel and Daimler-Benz were actively pursuing the development of their sales networks in the U.S. zone. Therefore, the Volkswagen factory needed to rapidly find good dealers before they entered into binding contracts with the competition.[296]

In this context, Münch recommended the Volkswagen factory to maintain high expectations for the quality of the dealerships. After all, as Münch pointed out, customers judge the manufacturer and his product principally on the basis of how the dealer represents the company and maintains the vehicles. In order to stay on top of the business policies of the dealers and to check their balance sheets, Münch wanted to create a new control structure. He suggested the company to found its own sales affiliates in some cities in Germany, which would serve as a sort of trial and simultaneously as a model for the development of the sales system. The General Manager referred to the large automobile manufacturers Opel, Daimler-Benz, and Adler, which had worked with this sort of branch system before the war. He considered the necessary investment small compared to the yield. As Frankfurt was already showing signs of developing into a "metropolis of traffic and trade," Münch voted for it to be the site of the first "Volkswagen Dealer Organisation."[297]

Delivering Vehicles in the French Zone

Developing a sales network in the French zone caused the greatest difficulties. In 1946, with the agreement of the British custodians, the French military administration had transferred the general representation of the Volkswagen Company as well as the distribution of the vehicles to the Oberrheinische Automobil AG (ORAG, the Upper Rhine Automobile Corporation). In contrast, contract repair shops of the Daimler-Benz Corporation took over the repair of Volkswagens. This was after a former Porsche employee's plan to develop a Volkswagen customer service center shortly after the war under the direction of a French officer had come to nothing. In Baden-Baden alone, about 300 cars a month were dealt with in the repair shops by May 1947. But while the repair jobs mounted, the supply of spare parts to the repair shops rapidly diminished. After ORAG had taken over a spare parts depot of a French unit in Muggensturm, Daimler-Benz received the order to produce spare parts for Volkswagen itself. The company expressed reservations about manufacturing company-external components and invited General Manager Münch to Gaggenau for a discussion to clarify the issue. During the talk, Manager Gutter privately related that Daimler-Benz had no interest in the business of Volkswagen repair. However, it had no objection to Volkswagen entering into repair contracts with the contract shops of Daimler-Benz.[298]

This temporary solution, however, was not sufficient to guarantee customer service care for the growing number of Volkswagens in the French sector. In December 1947, the Military Government there asked whether its vehicles could be repaired in Wolfsburg. Hirst refused to provide direct help because there were 800 vehicles awaiting updates, which meant that personnel and space were already being utilized to full capacity. Instead, he promised to support the French or the ORAG in developing a repair shop by providing practical and technical tips. As business with Volkswagen comprised an ever greater portion of the German economy, the French Military Government in February 1948 informed the British custodians at the Volkswagen factory that they had decided to have a sales network organized in the French zone. The supervising agency that distributed steel rations and controlled their use assured the Volkswagen factory that the supplies of raw materials would improve and that the distribution would be fair. The cars and spare parts were to be distributed to the dealers – who were to be carefully selected – once the customer base had begun to emerge without regard to the area being served.[299] At the end of 1948, these arrangements began to bear fruit: The Volkswagen factory announced that the French occupation zone had been incorporated into the sales network with the company represented by a general agency, ten wholesalers, five subsidiaries, and three repair shops.[300]

The successful development of a sales network in the three Western occupation zones could be statistically verified by the end of 1948. The Volkswagen factory sold 19,593 vehicles through its sales network comprised of 234 dealers and repair shops. After the currency reform, deliveries to the Allies rapidly declined, with sales to the private market, agencies, and public institutions making up the core business. However, even after the currency shift, civilian sales were still hampered by the ration cards and qualification certificates arising from rationing, whose holders were preferentially supplied. In early October, there were still 3,600 qualification certificates; the rations for 1,700 of these were supplied by the end of the year.[301] Nonetheless, the Volkswagen factory carried out the transition from rationed distribution to selling its product on the market and began to get its dealers to commit to the new tasks associated with this, as well as to engaging actively in customer relations.[302]

This shift in perspective was reflected in adaptations in the organizational structure and in improved coordination of the external organization. The new group "Marktbeobachtung und Statistik" (Market Observation and Statistics) collected information about Volkswagen buyers that it passed on to the trade organization in publications like the "VW Informationsdienst." Instructions for developing a spare parts depot and for efficient repair shop operations with professional accounting helped the dealers and repair shops to get better organized. The establishment of a construction consulting office for dealers in the Wolfsburg Customer Service Department at the end of 1948, likewise, was directed toward setting quality standards. The increasing number of deliveries spurred many of the facilities used by the Volkswagen representatives to expand, so the construction consulting office was intended to save the dealers from "later disappointments and possible repeated renovations" as they formed their construction plans. It was also supposed to provide model construction ideas and help dealers design the interior decoration for their showrooms.[303]

When the delivery obligations for the occupation powers ceased in 1949, the organizational structures for sales and customer service expanded even more rapidly. By the end of the year, there were 59 wholesalers, 164 subsidiaries, and 213 contract repair shops that transacted the sale and support of the 37,580 Volkswagens that had been sold in West Germany. Eight percent of these were sold to German agencies, 10 percent to public institutions, and 80 percent to the private market. Sales to industry comprised the greatest portion of domestic sales with 27 percent; trade and commerce comprised 14 percent, as did freelance professions.[304] Only now did the development of the sales structure – which the British and German management had pushed since October 1946 – pay off. Within a few years, the company had succeeded in casting a sufficiently tight network of dealers across the Western occupation zones, thus eliminating a serious disadvantage it had had in relation to its competitors.

4.2 Struggling to Achieve Quality

"Too ugly and too loud" – this was the judgment SMMT President Rootes passed on the version of the Volkswagen Beetle manufactured during the war, further adding his grim prognosis: "An automobile like this will remain popular for two to three years, if at all."[305] But Rootes was mistaken about its future development. In the 1950s, the Volkswagen pulled German society out of its deep automotive slumber and, as the "rolling economic miracle," came to embody the new German self-confidence.[306] The Beetle turned into an export hit, breaking Ford's record success with its "Tin Lizzy" by selling 15,007,043 models in 1972. Its symbolic power and later reputation sometimes lead us to forget that the Volkswagen manufactured in the initial occupation years did not, in some respects, satisfy the standards of English or French automobiles. The postwar version and the Volkswagen of the economic miracle lay, if not worlds apart, then on opposite ends of a broad field of substantial improvements. The British and German management's work to achieve this qualitative leap forward in the first postwar years was never-ending. Given the adverse conditions of these years, setbacks followed advances again and again. After all, with workers who were poorly nourished and accommodated, a dearth of skilled laborers, an irregular production process characterized by improvisation, as well as poor material quality and insufficient supplies, the Volkswagen factory was hardly in a position to manufacture a quality product.

British Quality Policies

A high number of faults and a variety of complaints made up a daily part of the business from the beginning of serial production of the Beetle. For example, in May 1946, 200 of 231 cars produced in a three-day period needed extensive repairs. Bryce, the head of the British factory inspection division, considered the fact that the faults were found at all a success. On the other hand, the manufactured faults indicated that the inspection of vehicles during the individual production stages was inadequate.[307] This was why Hirst had already taken up the cause of developing a quality control system at the start of 1946. For want of skilled German workers, he entrusted this task to a small team of non-commissioned officers that the British army had sent to the Volkswagen factory at his request. This included Bryce, a metallurgist who, as an inspection officer for army vehicles, had ample experience in this area. He, above all the others, contributed good ideas for improving quality and, together with Hirst, developed a fault response system. The inspection unit was to be subordinated to the German factory management as soon as a suitable specialist could be found.[308] However, more than a year passed before Helmut Orlich, who had worked for Opel in Rüsselsheim, took up the position of Chief Inspector.[309]

SERVICE BULLETIN No. 13|4
Kundendienst-Brief Nr. 13|4

WOLFSBURG MOTOR WORKS — VOLKSWAGENWERK

Wolfsburg, 9 July 1946

Subject: Silencing Engine.

To silence the engine the following modifications have been introduced effective from chassis No. 1-057 893, body No. 66 991.

1) The rear portion of the roof side members are stuffed to a length of 20" (50 cm) with sound proofing material. (Fig. A.)

2) To prevent sound proofing material from falling out, a small bag filled with sound proofing material is inserted between roof side member, rear window frame and outer panel, and pasted in place. (Fig. B.)

3) The rear luggage compartment, part No. 802 771, is covered with felt, .39" (1 cm) thick, which is to be pasted in place. On top of this felt is placed the floor mat (consisting of cardboard and protective mouldings), using metal screws. (Fig. C-D.)

4) Felt, .39" (1 cm) thick, is also to be pasted on the partition between instrument board and petrol tank. (Fig. E.) The cardboard previously used is placed on top of the felt.

Betr.: Dämpfen der Motorgeräusche.

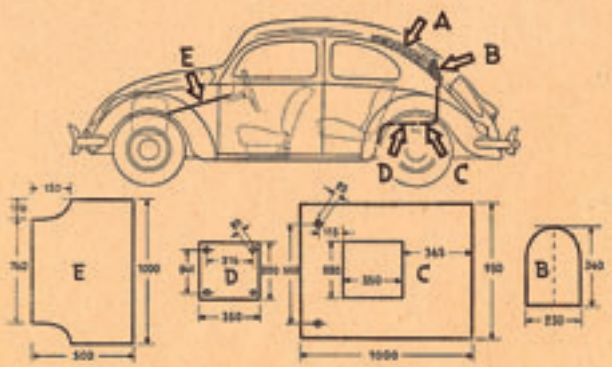
Zur Dämpfung der Motorgeräusche werden ab Fahrgestell-Nr. 1-057 893, Aufbau-Nr. 66 991, folgende Änderungen durchgeführt:

1) Der hintere Teil der Dachholme wird in einer Länge von 50 cm mit Dämpfungswatte gefüllt. (Abb. A.)

2) Als Abschluß dieser Füllung wird zwischen Dachholm, Rückblickfensterrahmen und Außenwand ein mit Dämpfungswatte gefülltes Säckchen eingeschoben und angeklebt, um ein Herausfallen der Watte zu verhindern. (Abb. B.)

3) Der hintere Kofferboden nebst Rückwand und der Kofferdeckel, Ersatzteil-Nr. 802 771, werden mit einem 1 cm starken Jutefilz beklebt. Darüber wird der Kofferbodenbelag (bestehend aus Bodenpappe mit Schutzleisten) mit Blechschrauben befestigt. (Abb. C-D.)

4) Die Vorderwand zwischen Schalttrett und Kraftstoffbehälter wird ebenfalls mit einem 1 cm starken Jutefilz beklebt. (Abb. E.) Die früher verwendete Pappe wird darüber gelegt.



The to-do list for the officers responsible for improving quality was long. "Customer Service Letter No. 13," for example, reported initial success in an attempt to reduce engine noise. For this purpose, the back part of the roof panel had been filled with cotton batting, jute felts had been pasted to the floor of the trunk by the rear panel as well as the trunk lid, and then a covering had been affixed to the trunk floor. The still very high noise level was reduced further the next year with a soundproofing compound.[310] The "colorful engines" that were installed until the spring of 1947 were aesthetically displeasing: they had dark yellow air filters, green cover plates, and black and green tubing. While these flaws could be fixed relatively easily by making all the colors uniform, some technical deficiencies could not at first be taken care of. Consequently, Bryce recommended that Customer Service be informed of the sluggish steering, the clutch noises, and the tires that rubbed on the bumper bolts so that they could suggest to Volkswagen "users" that they solve these problems themselves.[311] Another cardinal problem that proved to be complex and difficult to solve was perfect paint jobs. As the Sales Department reported in December 1946, a portion of the vehicles delivered in the preceding month had been covered in a thick layer of dust, which had left visible damage on the outermost layer of paint. This could only be fixed with a new paint job. Most vehicles were also beginning to show signs of rust on the door hinges, on the seams of the front and back aprons, and on the rain futters. When vehicles were handed over to the U.S. Army, the flawed paint jobs and the emerging rust prompted inspectors there to send 20 to 25 percent of them back on average.

Causes of the Quality Problems

Insufficient space for parking the new vehicles was partly to blame for the paint and rust damages. The storage space made available for sales in the foundry turned out to be unsuitable because the roof panels were sometimes badly damaged and had not yet been sealed even though the Design Department had been reminded several times to do so. Rainy and snowy weather had left so many calcium deposits on the auto bodies that almost all the vehicles to be delivered had to be partially or completely repainted. As a result, the Sales Department announced in December 1946 that it would not accept the vehicles in the future.[312] While space issues improved, the car paint problems remained. In June, 1947, 220 vehicles had to be repainted. Three months later, factory inspectors reported that the green auto bodies for the American Army had quickly become unsightly because of "signs of corrosion between the putty and paint layers" and so could not be delivered. For the same reason, a series of gray cars for the French and green ones for the British army had to be repainted.

Beetles in front of a Bombed Out Hall

In order not to "endanger the reputation of the Volkswagen through neglect," the Inspection Department demanded that the quality of materials used be improved right away. The laboratory had to be equipped properly so that it could test the supplied paint, putty, and paint thinner, the Department said. Moreover, the factory needed an expert familiar with the latest paint production processes who could bring the paint shop up from its "primitive handicraft level" to a "modern operation."[313] Measures taken to protect the vehicles from corrosion did alleviate the problem somewhat but did not eliminate it completely. Only in January of 1948, when an expert was appointed to improve the painting process at Volkswagen, was a solution initiated.[314]

Other deficiencies in the appearance of the Volkswagen sprang from a manufacturing process that was seriously disrupted by poor material quality, a lack of tools, wear and tear to machines, and worker shortages – all of which made improvisation more or less the rule. In addition, the poor diet severely impaired workers' performance and motivation so that they were more likely to be imprecise in manufacturing parts and assembling the vehicles: the doors and hoods did not close properly, the glove compartment lining curled up, and the lenses on the headlights and on the inside lights popped off due to excessive tension even when the cars were not moving at all. The factory management had no illusions about the aesthetic impression of the Volkswagen. At the production meeting in June 1946, everyone present agreed that the car's appearance and assembly had to be drastically improved.[315]

Even Josef Kales, the manager of the design office, added salt to this wound when, in December 1946, he pointed out that the execution of the Volkswagen Beetle was objectionable on several points. In his view, small details in the parts manufacturing and assembly were endangering the reputation of the "Volkswagen, which was still marching on the frontline in technology." He expressed mild criticism of the British production plans in remarking that the manufacturing had its eye more on quantity than quality. Kales warned that the requirements for the finish quality could not be disregarded, for example, that a part "rather than being caulked oil-tight only gets a few chisel strikes or that a cylinder has any other shape besides cylindrical." The chief designer felt that in large-scale production, "proper and conscientious preparation" was the most important prerequisite, starting with the quality of the materials, including the good functioning of the equipment and machines, all the way to the precise assembly of every single part.[316]

The custodians and management derived their confidence that the Volkswagen did not need to fear the competition despite the poor manufacturing at this point in time from their trust in its design. Its now famous robustness was an asset that the company could use to grow. Visibly impressed by this, Berryman demonstrated the structural stability of the Beetle to three Ford engineers by driving over streets riddled with potholes behind the factory. Except for rattling doors, the car survived the tortuous stretch without a scratch.[317] In any case, in Kales's view, the Volkswagen made a positive impression at the first international automobile exhibition in Paris. Even though its design was 10 years old, it measured up in every way to the new creations of the French, Kales emphasized, despite displaying a few weaknesses. However, since the production was set up for this particular execution of the model, the company would have to stick to it out of commercial considerations. The steering design, for example, proved to be not at all satisfactory because metal sheets rather than cast iron were used for the steering gear housing and the required high precision in production could hardly be maintained. Consequently, the steering was sluggish and shaky.[318] Aside from these things, the air-cooled, noisy engine, the lack of synchromesh transmission, as well as the cable brakes were hardly marks of modern automotive technology.

The list of apparent deficiencies remained long. For example, a loud "ticking" noise in the valve tappet on the right side of the engine generated many complaints. Neither in vehicle testing nor in post-production adjusting could the problem be resolved. Leaky fuel cocks counted among the most unpleasant flaws since they did not become apparent until after the tank had been filled. In May 1947, ten fuel tanks had to be expanded and sealed , and in June, 15 fuel cocks had to be replaced. Karl Martens, who worked in the Sales Department, suspected that the cause lay in the "impact of the steering track rods" and prompted the Design Department to find an immediate solution. The carburetor became a persistent problem area as it often appeared dirty even before delivery. When it was cleaned, a "brown-black emery-like mass" became visible in the fuel bowl and clogged the nozzles. For this reason,

Quality Control at Registration Point 17

twenty of the vehicles transported to Hamburg in April 1947 wound up stuck along the way. In addition, it was difficult to find the correct setting for the carburetor. The manager of the repair shop at the wholesale company Schultz complained when the cars were transferred that the carburetors had no transition so that when the gas pedal was suddenly pushed hard, they would "choke." Damage to transmissions, broken camshafts and steering that would not right itself to "straight ahead" after a curve rounded out the rest of the drawbacks of the model.[319]

Problems in the Factory Inspection Department

The Sales Department had repeatedly called for a more thorough final inspection process so that the deficiencies could be found and taken care of before the cars were delivered. Arranged with the Inspection Department, new, stricter conditions for transfer went into effect on March 20, 1947, after which the number of complaints dropped considerably. In May 1947, a review showed initial successes: in comparison to the previous year, the tolerances of the engine parts turned out lower. For the cylinders, in particular, the material and finish quality as well as the exactness of measurement had improved. The greater manufacturing precision reduced the running noise of the gears in the transmission and the rear axle.

By means of various alterations and the more precise design of the carburetor, it was possible to make the cars idle smoothly and to shift while accelerating, as well as to reduce fuel consumption while engine performance was raised by 2 to 3 horsepower.[320] In July 1947, Martens was able to give the positive report that, with the exception of the leaky fuel cocks, the earlier deficiencies had not reappeared.[321]

The Inspection Department noticed a drastic drop in the quality at the same time rapidly dampened spirits, particularly since the factory would soon be exporting cars, which increased the pressure to achieve progress in quality immensely. In this situation, Hirst resolutely and systematically pushed forward the quality policy in order to make the Volkswagen fit for its debut in the European automobile markets. At the management meeting at the end of July 1947, he announced a three-phase program for the further development of the vehicle. Phase one involved attempts to acquire better materials and to maintain precision in manufacturing. The second phase aimed to eliminate faults and improve the car and the equipment without making changes to the design. In phase three, which the Board of Control later postponed, a new automobile design was to be pursued.[322]

The German management pulled together on this when it held discussions concerning the quality degradation that had begun in mid-1947. These discussions, lasting for several weeks and involving a number of departments, revealed that the quality issues derived from organizational deficits.[323] As Paulsen, the head of the Purchasing Department, explained, ordered materials often sat for four to eight weeks before inspectors for incoming goods checked them. In addition, the responsible departments had failed several times to pass on desires for change and modified technical drawings in a timely fashion. As a result, too much time passed unnecessarily between the identification and elimination of a quality problem.[324] The halting pace of production took its toll on product quality and also made it even more difficult to coordinate personnel assignments. Absences among skilled workers resulted in a higher percentage of faulty and rejected products.[325] Moreover, the "general indifference of the workforce caused by the diet and lack of prospects" left little room to hope that workers would become enthusiastic about trying to improve quality.[326]

Although no one in the management denied the need for quality to rapidly be improved, the Inspection Department was by no means properly equipped nor sufficiently supported to effect this. As Orlich pointed out once again in October 1947, the appropriate instruments and trained personnel were entirely lacking, and as the Department paid less than production departments, it was even more difficult to hire skilled workers.[327] Aside from this, the Inspection Department continued to be an unloved child within the factory because of its task. Given the poor material and workforce conditions and the compromises associated with these circumstances, it was difficult to maintain an appropriate quality standard. Inadequacies in production were more the rule than

Officers Standing in front of a Beetle

the exception, and the production departments were surely not very interested in having their faults continuously held up to view. Thus, the Inspection Department really did not enjoy widespread acceptance. Its decisions were constantly played down and often also disregarded. Hirst had driven some cars straight off the assembly line at the beginning of October 1947 and was not satisfied with the work that had been done, as he informed General Manager Münch in writing. The management needed to urge all department heads to improve quality, he wrote, because the current production was in no way competitive. Hirst judged the lack of sufficient oversight in the manufacture of auto bodies and the Mechanical Workshop, which was certainly the most impaired by building damage, to be the sources of the problems. In these areas, he concluded, "substandard work" was passed on all levels.[328]

Hirst's suspicion that the production departments were ignoring the inspection results was not incorrect. Only a few days later, a complaint from one of the inspection managers landed on Münch's desk. In the press and hardening shops, Orlich wrote, the foremen had flouted the decisions of the inspector in "the most frivolous way," and had sent the crown gears on to production without having passed the inspection station.[329] This was not a singular occurrence and thus proved that the work of the Inspection Department was still largely unappreciated, particularly in its importance for establishing competitive serial production. The managers in Inspection were not prepared to put up with such infringements and demanded that the guilty parties be held accountable. Münch did not take this complaint lightly; rather, he demanded a fundamental clarification in order to avoid any further unpleasant surprises.

Just a short while earlier, the control arms of four vehicles had broken off because of poor material quality, leading the company management to negotiate a possible trade. As the fault could not easily be removed, Hirst had procured a detector from the British army that would be used in the future to test all-important steering parts magnetically for flaws.[330]

It was the very first Volkswagens allocated for export that demonstrated how long the road to manufacturing technologically and qualitatively flawless vehicles continued to be. Although these cars had just been manufactured with "select structural components," all the serious flaws were present. This was all the more embarrassing for the Volkswagen factory in that the faults were discovered not by the factory's inspectors but by representatives of the Pon's Automobielhandel, a Dutch importer. The Dutch noticed non-functioning blinkers, a faulty hood lock, a handle for the heater that was not attached, sluggish gear shifting, dented hubcaps, a bumper that was poorly chrome-plated, a stain on the back rest, and steering column tubes that were imprecisely installed. It was clear to the German factory management that such objections could not come up again in the interest of developing a successful exporting business.[331]

Progress in Product Quality

Despite this slightly unfortunate premiere in exports, Münch was able to point to favorable results by the end of 1947. A felt air filter was developed and a screen was added to the cooling fan, which took care of the heavy soiling and undercooling of the engine. This had a positive effect on the life span of the cylinder, whose quality was improved by adjusting the alloy parts and changing the processing. After the cylinders and pistons had been lengthened, the Volkswagen ran more quietly. By adjusting the production line, greater precision could be achieved in manufacturing crankshafts. Improved riveting eliminated the loosening of the camshaft sprocket. Noises that frequently cropped up in the crown and bevel gears disappeared thanks to a new device that made it possible to align them more precisely. In the transmission, the dimensional accuracy and surface finish quality were raised in the gears, moving parts, and bearing seats. To check the running noise of the differential and the transmission, a new test station for listening to the transmission was built. The rattling in the front axle had disappeared; the steering functioned well. In the assembly of the sheet metal parts, various corrections had resulted in doors and hoods that closed properly.[332]

One important new development was only in the design stage. At the beginning of September 1947, Kales began to pursue the installation of a hydraulic brake made by Teves.[333] However, it was expected to take two years for the new brake system to be ready for serial production. Nonetheless, the Beetle had undergone a sort of metamorphosis since production had begun, which Hirst demonstrated retrospectively using steering as an example: "We began with a car that had wobbly steering. I said, okay, change the shock absorbers, balance the tires; that was done. Exchange the steering gear housing; it was done. Trade out the front axle; it was done. And we had a different car (...)."[334]

4.3 Exporting to Europe

Exporting German goods was an existential issue for the shattered British national budget. Although the British had emerged from the war victorious, administering the largely industrial British zone, which was overflowing with refugees, was becoming a financial burden, with food imports from other countries comprising a large part of the occupation costs. Under this financial pressure, the British unilaterally raised the production level in their zone in order to reduce occupation costs by increasing export income.[335] At around the same time, the Volkswagen factory's Board of Control put the export issue on its agenda. After the monthly production at the plant had stabilized at the level of 1,000 vehicles a month, the British aimed to raise production to 2,500 vehicles a month by the end of the year with 1,500 of these intended for export.[336]

In order to convey this idea to the British government, Leslie Barber of the Property Control Branch traveled to London in June 1946, where he explained the plans at a meeting of the Control Office for Germany and Austria. Against the intention of dismantling the plant, he argued that the inhabitants of Wolfsburg were dependent on the Volkswagen factory as their employer because there were not enough other job opportunities. Barber considered it irresponsible to deprive these workers of their jobs and to allow their housing to deteriorate. Instead, he suggested that production be raised to 2,500 vehicles a month with 1,000 for the British Military Government, 1,000 for export, and 500 for German domestic consumption.

Gibson, the chairman of the National Savings Committee, made a move in this same direction when he sounded out the possibility of expanding Volkswagen's production for overseas sales. In July 1946, he presented to British Minister of the Treasury, Hugh Dalton, the idea of exporting Volkswagens for a limited period of two years to Switzerland and Sweden under British control. In the meantime, Gibson thought, the British automobile industry could adjust to the demand for cars in Europe while the export of the Volkswagen would prevent U.S. manufacturers from filling the gaps in the European market. To make the project appealing to the Chancellor of the Exchequer, Gibson projected foreign earnings of 7 million pounds.[337]

Conflict among the Ministries about Exporting the Volkswagen

This was a smashing argument for Dalton, who, for his part, was pressing for reductions in occupation costs in order to relieve state coffers. To finance the war, Great Britain had needed to sell most of its foreign holdings, and now it was pumping its dwindling dollar reserves into the purchase of food and raw materials for the British zone while its own population was subjected to food rationing. The gap in the budget was, after all, one of the reasons that the British government favored the fusion of the zones, which made the occupation apparatus smaller and reduced occupation costs. The Ministry of the Treasury thus advocated that the administered enterprise in Wolfsburg raise its share of income and foreign currency, if necessary by exporting the Volkswagen. Together with the Foreign Ministry and the Military Government, it formed a united front on the export question. The Military Government had already been recommending for some time that no opportunity to export goods from Germany be missed.

Both the Trade and the Supply Ministry fought the plans as protecting the domestic automobile industry was their top priority. Both feared – and not without cause – that any production increase for the purpose of export would lead to a revision of the plan for the level of industry, and thus to a growing number of cars being produced. That would take away the steel supplies not only from the domestic automobile industry, which needed them for economic recovery, but also from the German companies that were of direct importance for the English economy. In the summer of 1946, the Trade and the Supply Ministries achieved a preliminary victory, and the case for exporting Volkswagens was temporarily closed.[338]

Nonetheless, a provisional compromise did allow the cars Volkswagen produced beyond the 1,000 mark to be handed over to members of the British and American Military Government for 100 pounds. This discount price was supposed to compensate for the fact that the Volkswagen could not be resold outside Germany. Yet, in the end, the negotiations for fusing the zones brought down the prohibition since the Americans voted to allow unlimited sales at a reasonable price. As a result of the pressure the Americans exerted, a resolution was drafted in October 1946 to sell the Volkswagen to the personnel of both Military Governments, the military missions, and the United Nations at the full export price of 160 pounds. As reselling was allowed, the British had now permitted the first indirect exports of Volkswagens.[339]

The Failed Export Project

The negotiations for establishing the bizone that the British and the Americans began in July 1946, finally paved the way for the export of the Volkswagen. Against the opposition of the British automobile industry and the Supply Ministry, the Military Government suspended the idea of dismantling the Volkswagen factory for a further four years.[340] In March 1947, the Bipartite Control Office revised the plan for the level of industry so that, once production started up again, the British Military Government could begin to set a course for the export of the Volkswagen.[341] The following month, the British plans for export began to take concrete shape. The Belgian government had expressed interest in importing unassembled Volkswagens in order to stimulate employment in its domestic automobile industry. A discussion between British and Belgian representatives resulted in the suggestion that 5,500 Volkswagen vehicles be exported to Belgium. Of these, 500 were to be delivered as auto bodies and 5,000 as sheet metal plates with engines, transmission, and axles, for which the Belgian automobile industry would undertake the assembly, as well as equip them with glass, upholstery, batteries, etc.[342] The director of the Mechanical Engineering Branch in Minden, E. Harle, regarded this as a lucrative deal because the government in Brussels had promised to supply high-grade sheet steel and the press shop at the Volkswagen factory would have unutilized capacities.

To get this export business going, Harle made the suggestion to the Head of the Industry Division in the Berlin headquarters that production at the Volkswagen factory be raised up to the limit on the basis of the available steel in order to satisfy the various interested parties. Every month, 1,000 cars were to be made for the Military Government, as well as another 1,000 for the export business, and everything that was produced beyond that was to be made available to the German market.[343] Although the Supply Ministry objected, warning that the steel resources were rather scarce, the die for exporting the Volkwagen Beetle had been cast. In June 1947, the British clinched a deal with the Belgian import company Electrobel to supply 350 vehicles at the price of 160 pounds each. As the steel sheets necessary for this were supposed to be delivered, the Supply and Trade Ministries set aside their reservations.[344]

The factory management was very interested in the idea of exporting the Volkswagen not as a complete vehicle but broken down into components. The advantages of this sort of deal, which Sales Director Kemmler enumerated in a note to Hirst in the middle of June 1947, were obvious. As the Volkswagen factory could circumvent problems in acquiring scarce materials, the export business could get started much sooner than if complete vehicles had to be supplied. Foreign currency would flow more quickly this way into British import funds, which the Military Government used to pay for food and raw materials from other countries. A part of the export proceeds would benefit the Volkswagen factory directly as a freely disposable export bonus that was urgently needed to import scarce

materials. By getting the sheet steel and doing without the other equipment, the factory would be able to get the contract through production much more rapidly, and the supply of materials by the importer would only comprise a small part of the export revenue. In Kemmler's view, what was decisive in judging this deal was the foreign currency gains that could be realized.[345] But the scarcity of steel in Europe caused the deal with Electrobel to fall through. When the British factory officers visited the Belgian steel mills together with representatives of the import company, it turned out that the mills were working at their maximum capacity for the British automobile industry and would not be able to send any sheet steel to Wolfsburg.[346]

Despite such setbacks, the British Military Government stuck to its decision – which London had blessed – to sell the Volkswagen Beetle in foreign markets, particularly since it expected its transportation needs to drop by the end of 1947. The vehicle production that this would free up was to be divided equally for export and the German market, although the delivery for the British government including the REME would have priority. The Board of Control, however, strictly prohibited sales on the international black market, where the Volkswagen brought in RM 20,000 to 30,000. Hirst warned the factory management that while those sorts of deals did show promise of great dollar rates, they would take their revenge in time. In the eyes of the custodians, only by exporting via representative importers "according to healthy business principles with, however, lower currency proceeds," could they guarantee a stable and sustainable foreign business. To ensure that this path was maintained, the British and the Americans founded the Joint Export Import Agency (JEIA) in December 1946 in Frankfurt. Once the bizone was established, the agency took up its task to promote the export of German goods and to use the proceeds to finance the import of desperately needed food and scarce materials. The JEIA, which was also responsible for overseeing the export of Volkswagens, was prepared to purchase foreign materials in order to raise the quality standard in painting and upholstery. To what extent the export bonus of 10 percent was to be utilized for this purpose remained undecided. By restricting the use of imported materials to vehicles intended for export, the British Military Government took the objections of the Trade and Supply Ministry into account.[347]

Signing the First Export Agreement
at the Hanover Trade Show

The First General Importer

The starting gun for the export of the Volkswagen sounded on August 8, 1947, at the first Hanover Trade Fair, which was symbolic of the economic growth in the British zone.[348] With the custodians' permission, the Volkswagen factory and the Dutch company "Pon's Automobielhandel" of Amersfoort signed the first importer agreement.[349] The Pon brothers had planned patiently for this day for months and, during this time, as Hirst remembers it, had suggested an unconventional swap to the British. On one of his visits to the Volkswagen plant, Ben Pon had stopped in at the headquarters in Minden to discuss the import of Volkswagen cars into the Netherlands with Colonel Radclyffe. When Radclyffe found out that Pon had previously worked in the automobile industry, he offered to give him Volkswagens in exchange for sheet steel. Instead, Pon offered masses of herring for the factory kitchen. As herring had too much fat to conform to the nutritional guidelines and so could not be given to the workforce, Radclyffe had to decline the offer.[350]

Once the first official export agreement had been made, it became necessary to specify the design of the export model more precisely and to set a standard. A committee made up of Feuereissen, Paulsen, and Striebig that formed in June of 1947 was responsible for adapting the Volkswagen to the demands of foreign buyers in its equipment and appearance.[351] On the basis of the Beetles intended for the Netherlands, Feuereissen and export manager Peter J. Kock set the specifications for the future export model: it should have

Delivering the First Export Vehicle in October 1947 to Ben Pon: Karl Feuereissen, Karl Schmücker, Ben Pon, Karl Martens, Frank Novotny, Peter Kock (from left to right)

better paint without gloss, corduroy for the upholstery and for lining the floor of the trunk and back panel, bumpers, hubcaps, door handles, hood handles, an embedded horn and chrome headlight rings, as well as low-noise engines and rear axles.[352]

In early October 1947, the first five Volkswagens were delivered to Ben Pon – the sixth did not pass the inspection – generating a lot of buzz in the press, which appropriately savored this "historic moment" as the rebirth of the German automobile export business.[353] Still in the same month, the Volkswagen passed its first international comparative test at the Auto Salon in Paris, which emphasized the model's favorable price-quality ratio compared to other manufacturers. Accompanied by Radclyffe, Hirst had visited the first international auto exhibition of the postwar period in order to set an appropriate price for the export Beetle. The market analysis revealed that the Volkswagen was comparable to the Škoda, which was supposed to be the benchmark.[354]

Nonetheless, there could hardly have been a worse time to start up the export of the Volkswagen. In August 1947, the material supply crisis became so acute that production dropped to 800 cars for the month and the mandatory order for 1,000 vehicles a month had to be extended for another half year. Consequently, the British backed off their overly optimistic plans, adjusting them to the economic circumstances. The new schedule arranged in agreement with the JEIA and the VAW Planning Division postponed the pro-

duction increase to 2,500 vehicles a month to the following year. Until then, the occupation needs were to be reduced to 300 cars a month to make the rest available for export and the German market. General Manager Münch recommended that the ordered program be somewhat lowered and the deficit be made up later so that some vehicles could already be exported. Hirst rejected this idea, arguing that firm resolutions had already been drafted concerning these issues.[355]

Regardless of the material problems, the British custodians began to arrange further paths to export to European countries as the Beetle had found potential new buyers at the Hanover Trade Fair. With a view to the expected export volume of 6,000 Volkswagens for 1948, the "Export Sub-Committee" of the Board of Control decided in October 1947 to export the vehicles to the Netherlands, Belgium, Switzerland, and Scandinavia – places that had hard currency to spend. In order to take advantage of the automobile exhibition that was to take place in February 1948 in Brussels and to find a suitable importer quickly, the British presented the Volkswagen at the end of October to a number of companies in Brussels.[356] For this, they had ordered a model car manufactured with special care; it had the same design as the vehicles delivered to Holland: black paint, wine-red upholstery, matching tires and trim strips with chrome-plated bumpers, wheel trim caps, door and hood handles. To make the export model not only aesthetically but also technologically impressive, the chassis of Hirst's car was to be used.[357] Three more export vehicles were ready by November 1 for a presentation in Switzerland.[358] Yet, in light of the material supply problems, the British initiative did not yet lead to new export agreements.

In December 1947, a shortfall of 3,350 tons of steel emerged in the rationing of raw materials for export and civilian enterprises. One reason for this lay in the decision to preferentially distribute steel rations for export when signed contracts were already in hand. On the other hand, the VfW only advanced small amounts of steel for planned deliveries, and Radclyffe's efforts to acquire the missing quantity of steel were unsuccessful.[359] For want of sufficient steel rations for expanding the production volume, the Bipartite Control Office in Frankfurt prohibited further export licenses from being issued. Until 1948, all manufactured export vehicles were to be delivered exclusively to the Dutch general importer.[360]

For the time being, the great expectations that the British, above all, had placed in the emerging foreign trade were not fulfilled. With 56 vehicles exported to the Netherlands in 1947, this trade hardly brought in any foreign currency. The custodians achieved considerably higher dollar proceeds in 1947 by selling cars that were included in the export business for accounting purposes principally to British families and the foreign press – in June alone there were 126 such sales.[361] More importantly, however, in the conflict of the London ministries, the export issue had been decided in the Military Government's terms. This provided the political as well as the economic conditions to begin expanding the export business the next year.

Setting the Course for the European Market

There was no shortage of potential buyers from foreign countries: at the beginning of 1948, numerous applications had arrived in the Export Department at the Volkswagen factory, especially from European countries including Switzerland, Belgium, Sweden, Denmark, and Norway. In the end, it was the British who decided which companies were suited to be general importers and promoters for the Volkswagen Beetle's debut on the European market. However, with Directive Number 1 of April 11, 1947, the JEIA had transferred the management of foreign trade to the foreign trade offices of the VfW and had established a two-step licensing procedure. According to this, the foreign trade offices of the state administrations were in charge of checking export options and, when an export agreement was approved, of obtaining the final license from the JEIA, which participated as a party to agreements made with foreign companies as the representative of bizone enterprises.

The new General Manager, Nordhoff, did not at all like this bureaucratic regulation, particularly since the British custodians gave him a relatively free hand in other areas. In the case of appointing general importers, on the other hand, they only granted the company management the right to participate in discussions and to make suggestions. Nordhoff made use of this in January 1948, suggesting the "Titan AG" for exporting to Switzerland. Yet the foreign trade office of Lower Saxony harbored doubts about the company's suitability – it had lost the general agency for General Motors "on account of apparent business shortcomings" – and requested an explanation.[362] Nordhoff, who strove to expand his decision-making powers, ignored this objection and defied the prescribed chain of command by entering into the second export agreement with Titan AG on February 10, 1948, and rapidly submitting it to the JEIA for approval.[363] The delegation then dispatched to Switzerland, which was made up of JEIA and VfW representatives, decided that the appointed general importer was not suitable and initiated an agreement with the Neue Amag AG in Zürich instead.[364]

Outraged, Nordhoff was informed by the foreign trade office of Lower Saxony that he "apparently did not clearly understand the tasks and powers of the foreign trade offices." For expanding and consolidating German export business, he noted, and especially for the export of automobiles, only first-rate companies that possessed all the requirements for stable development could be considered. Provided the Volkswagen factory took these criteria into consideration, it should, of course, be allowed to select a general importer. Otherwise, it would be "inevitable" that the German agencies would have to intervene "for reasons of general economic interest."[365] When the agreement was signed on April 29, 1948, the Neue Amag AG took over the task of importing the Volkswagen to Switzerland and selling it through its network of dealerships.[366] That the British JEIA representative vetoed Nordhoff's preference suggests that the custodians had already taken up contact with Neue Amag in November 1947 when the model car was brought into Switzerland.

Cars for Export to Switzerland

At first after this conflict, the task of concluding export agreements continued to be a matter for the responsible agencies, although they took a company representative into negotiations. In this way, Kock, the export manager at the factory, joined the delegation to Belgium and participated in the discussions with the applicants there in March 1948.[367] The agreement, which added the company Anciens Etablissements D'Ieteren Frères to the team of Volkswagen general importers, went into effect after the JEIA approved it on March 16, 1948.

However, the process of selecting and approving importers, made difficult by the participation of various offices, delayed the rapid expansion of the export business as did the unclarified responsibilities between the Military Government and the German institutions.[368] A change was initiated after the Allied Control Council passed a regulation stipulating that recipients had to pay for all German exports in U.S. dollars, which negatively impacted Volkswagen exports. A shortage of foreign currency limited exports to the Netherlands, and the Belgian government restricted dollar purchases. Under these circumstances, the JEIA and the VfW put the opening up of new export markets on the agenda.[369] On May 20, 1948, Vollrath von Maltzan of the VfW Main Department of Foreign Trade asked Nordhoff to look into sales possibilities in Egypt, as well as North, Central, and South Africa, and to submit suggestions for establishing Volkswagen proxy agencies. In addition, he thought it prudent to appoint a general importer for Sweden, even though the export of Volkswagens had not been adopted in the German-Swedish Trade Agreement. Binding negotiations with potential companies, however, were not to be undertaken to avoid provoking differences of opinion once again with the occupation powers.[370]

Nordhoff tried to take advantage of this situation when, a few days later, he asked Radclyffe to support him in his quest to gain autonomy: "I would like to request with all possible urgency to be entitled to handle export business, the nomination of agencies and the handling of daily business within my own responsibility (...)."[371] In early June 1948, accompanied by a representative of the JEIA and the VfW, Nordhoff traveled to Sweden and Denmark, where he led negotiations with companies under consideration. His suggestions coincided with the firms favored by the Bipartite Control Office, so that the export agreements made with the Danish Skandinavisk Motor Co. A/S on July 1, 1948, and with the Swedish company A/B Scania Vabis were approved by the JEIA without any problems.[372] After this arrangement had successfully been made, the Military Government was ready to make concessions. The procedure set in June 1948 gave the Volkswagen factory the power to lead negotiations with future general importers without the JEIA's involvement. The allied export agency nonetheless reserved the right – like the VfW – to have a representative present at these sorts of meetings.[373] Thus, a pragmatic arrangement had been found that was acceptable to both sides.

Until the currency reform, the British had laid a broad foundation for the future export business, which the Volkswagen factory management could build upon. The export volume of the five contracts amounted to 15,280 vehicles. The growth in production combined with the reduced quota for the Allies – which dropped from about 35 percent in the first half of 1948 to 7 percent in the second half – established the necessary production conditions for expanding the export business.[374] The British regarded this as a necessary step toward ensuring sales in the medium term, "when the internal market, considering the permitted number of cars in the Western zones, has been saturated."[375] Although in a different context, this is how the representative of the Property Control Branch formulated the core of the company's future strategy, which was shaped in advance by the enormous capacities of the Volkswagen plant and the product designed for mass production. For, in light of the internal market's weakness, it would not be possible to achieve capacity utilization of the factory without an export market. The British had set the course to the European market in 1947/48.

Export Model

Exports after the Currency Reform

The expectations of the Military Government and the company management that the currency reform would release the export market from its shackles were not immediately fulfilled. Despite a growing demand in foreign markets for the highly coveted Volkswagen, the export business did not meet expectations. Although exports soared compared to the previous year from 56 to 4,464 Volkswagens, it was not enough to keep up with the general growth in production because exports were subject to two major restrictions: on the one hand, the currency shortage in the European countries hampered the expansion of the export business because the JEIA only permitted exports in exchange for dollars. This so-called dollar clause formed the backbone of the American conceptions of reorganization with the goal of integrating West Germany into a multilateral trade system by tying its foreign trade to convertible hard currencies. On the other hand, the JEIA set the exchange rate at 30 cents for 1 DM and assessed the export price of the Beetle at 800 dollars according to British wishes so that the Volkswagen could compete with other small cars internationally.[376] After the new exchange rate was established, the export price converted to 2,667 DM. However, the production costs per vehicle amounted to 4,263 DM, which would have resulted in a loss per exported car of 1,596 DM.[377] A company report noted that the coercion to pay in dollars and the existing exchange rate "almost completely choked off the export opportunities."[378]

Against this backdrop, Nordhoff dramatically announced "the final death" of the export business when the existing contracts expired.[379] But the Volkswagen factory was spared the effects of the dollar clause due to existing special regulations. The JEIA rules allowed for all export contracts concluded before July 25, 1948, to be billed at the valid domestic maximum price of 4,505 DM per car. By this deadline, the company had an order volume of over 15,000 Volkswagens, of which 4,464 were delivered by the end of the year. This situation gave the company a significant lead over its competitors Opel, Daimler-Benz, and Ford, which together only registered a third as many exports as Volkswagen. When production figures rose after the currency reform, this improved capacity utilization and enabled the management to reduce the gross price of the standard Beetle in July 1949 from 5,300 to 4,800 DM and the price of the export model from 800 to 650 dollars.[380]

At the wholesalers' convention in January 1949, Nordhoff was able to draw a positive balance. By then, the Volkswagen factory had exported about 2,000 cars to the Netherlands, 1,500 to Switzerland, 1,050 to Belgium, and 100 to Luxembourg. Counting the official licenses entered the day before, Volkswagen ranked number one in Switzerland with 155 cars followed by the British standard model "Vanguard" with 120. Opel had a whole 12 cars. The General Manager thus asked its dealers for their understanding when the company had to deprive the domestic market of another 700 to 1,000 cars for the export business. For it would have been irresponsible "if we didn't try to take advantage of this unheard of opportunity."[381]

5. The Last Step Before Taking the Pole Position

5.1 The New General Manager

For the custodians, forming the company management in August 1947 was tied to taking care of an important personnel matter before they could begin the arranged withdrawal. As the British expected the vehicle needs of the Allies to drop significantly in 1948, and, at the same time strove to increase production, there were, in purely mathematical terms, considerable capacities available for expanding exports and supplying the domestic market. This placed growing demands on the company management, which called for a "first class technical General Manager," as Radclyffe explained in a letter from mid-October 1947.[382] Münch, who had been a commercial lawyer, was not up to the new task from the British point of view. A good General Manager in legal and financial matters, he possessed, according to Hirst, too little technical expertise to be able to manage the problems of a large automobile company. Hirst had recommended that the Board of Control look for a technically versed expert to support the General Manager.[383]

This was the hour of Heinrich Nordhoff, who not only had leadership qualities but also experience in the mass production of automobiles. Born in 1899 and raised in a middle-class, Catholic family, the trained mechanical engineer belonged to the generation of scientifically trained managers who had worked their way up to the leadership of companies during the Weimar Republic. As the manager of the Technical Department of Customer Service, Nordhoff took up employment in 1929 at Adam Opel AG in Rüsselsheim, a subsidiary of General Motors. There, he rose to become the technical advisor in sales management before he was appointed the manager of the truck factory in Brandenburg. As head of the Opel's agency office in Berlin and as the chairman of a special commission for three-ton vehicles in the central committee for motor vehicles, Nordhoff had contacts with the decision-makers in political parties, the Wehrmacht, and in ministries. As Nordhoff had achieved the rank of a "Wehrwirtschaftsführer" (War Industry Leader) , he was dismissed in accordance with the denazification guidelines in effect in the American occupation zone, even though he had not been a member of the Nazi Party.[384]

Unemployed from the end of 1946, Nordhoff took a position as the manager of customer service at the general agency for Opel, Dello & Co., in Hamburg. It was probably through the former Opel dealer Eduard Winter that contact with Hirst was established; Hirst invited Nordhoff to Wolfsburg for an interview. Visibly impressed by Nordhoff's appearance, Hirst abandoned his original plan and suggested the Opel man to become the General Manager. After conversing with Radclyffe, Nordhoff had won himself a second admirer who, together with Hirst, prepared Münch's dismissal. On November 7, 1947, the Board of Control appointed Nordhoff as the General Manager with the request to take up his position as soon as possible.[385]

At first, Münch heard nothing of this decision. He had introduced the new man to the company and had fostered a "friendly and harmonious cooperation" during this time. With a view to the future organization of the company, both had agreed to form a management team consisting of Münch, Nordhoff, and Steinmeier and later to adjust the division of labor according to practical needs.[386]

Heinrich Nordhoff

Thus, Münch's disappointment was all the greater when, on November 25, 1947, he was informed of his dismissal as the General Manager in a meeting with Hirst, Control Officer Neal, and Nordhoff. Just the evening before, Nordhoff had been a guest in Münch's home, although Nordhoff claimed that he had been prevented from saying anything about the British decision. Whether Münch believed this version remains an open question. In any case, his letter to Nordhoff sounded a bitter note when he demanded "that nothing sticks to my good name, the only thing that is left to me, and (...) that the accusation not be made that I failed here at a great and important task."[387] In fact, Nordhoff might not have voted for a triumvirate as he had made the guarantee that he would have "complete autonomy of action," vis-à-vis the British, a condition for accepting the position.[388] Münch would not be able to overcome his bitterness about the lack of recognition for his achievements. In April 1948, he would also quit as a custodian. Dr. Hermann Knott assumed his position on May 1, 1948.[389]

The Board of Control's personnel decision is remarkable in that it placed the profitability of the company above loyalty to the General Manager. Münch's achievements were indisputable. He had not only introduced cost-cutting measures but had also advanced the democratization of work relations with his good rapport with the Workers' Council and by implementing the Allied Works Council Law in a progressive works council agreement. All the same, the British did not hesitate to replace the commercial lawyer when he was no longer useful for an enterprise that stood on the threshold of entering the market and whose product, in 1948, needed to assert itself in the European and domestic markets. This situation placed new demands on the cost structure of the Volkswagen factory. No doubt, the British management's efforts to take advantage of the good export opportunities and to increase dollar proceeds influenced this personnel decision. For that, the plant's efficiency had to be increased.[390]

The Centralized Company Structure

After the change in leadership on January 1, 1948, the British factory management retreated into the background and, for the most part, gave the new General Manager free reign in running the company. Nordhoff used this gain in autonomy to implement a restructuring of the company, which had been discussed since the fall of 1947 and was long overdue, according to his own ideas. The urgency of this measure was once again made apparent in an internal paper that Hunecke, the manager of the Chassis Design Department presented to Nordhoff in late February 1948. In it, Hunecke frankly criticized the managers of the company who opposed any innovations. Whereas some of them made themselves "into sole rulers of the firm," he wrote, others were "bound hand and foot by the inadequate organization and cannot develop."[391]

In this context, Hunecke pointed out the promise that had not yet been kept to transfer the spatial and machine planning for manufacturing the chassis to him. His department, therefore, had been forced to manufacture a vast number of gadgets and tools for a car model that had been built for over two years. The machine repair unit, which normally participated in the planning, was completely isolated in the company's organizational structure, just as the so-called auxiliary operations – the Design Department, Electrical Department, and Tubing Installation Department – were poorly integrated into the organizational structure with the consequence that the Machine Repair and Tubing Installation Departments performed similar sheet metal work. Hunecke mentioned the organizational structure at Opel as exemplary: there, factory maintenance united the auxiliary operations firmly in one pair of hands. Hunecke summarized his critical remarks by concluding that a sensible organizational plan with precise definitions of rights and responsibilities could help to "somewhat relieve the operational muddle" and lay the foundation for harmonious teamwork.

Assembling the Chassis

Nordhoff was the right man to address these organizational deficits. Equipped with the self-image of an entrepreneur, he procured the necessary authority on the leadership team and the support of the British custodians with his appearance and his earlier post at Opel, as all were aware of his previous post. In addition, he possessed the required claim to power for eliminating internal trench warfare by instituting tight organizational structures, and he knew how to prevail against opposition to these changes.[392] Running the Volkswagen factory in a collegial fashion, as Münch strove to do, was, in the eyes of the former Opel manager, artificial and inefficient. Instead, he preferred the strictly hierarchical mechanistic structure based on the General Motors model, which matched his somewhat autocratic leadership style. The restructuring approved by the British in May 1948 centralized the decision-making powers in the hands of the company's general manager. Subordinate to him were seven main division heads who were in charge of procurement for the following divisions: Production, Personnel, Purchasing, Sales, Technical Development, Finances, and Inspection. The chief custodian responsible for asset management reported directly to the British supervisory boards. With this, the Volkswagen factory obtained a modern, functional organizational structure, which marked an important step toward cost reduction.

Hirst, above all, who helped in his controlling role to take care of the material problems that continued to crop up, was made to feel that the new General Manager was of a different caliber in his leadership style. Accountable to the leading factory officer, Nordhoff managed to arrange the discussions in such a way that Hirst felt like he had to report to him. The experienced manager rapidly gathered all the authority for himself and elbowed his rivals out of business operations probably more quickly than they had expected. The British found this acceptable and functional in that, in 1948, they were able to retreat successively from managing the company, and because Nordhoff fully met the expectations they had set in him.[393]

Nordhoff with Steinmeier, 1952

Once the mechanistic, top-down management principle had been introduced, some of the responsibilities of the various main divisions were rearranged. The Technical Development Department, especially, which had comprised the Design Office and the experimental facility before, emerged from the organizational restructuring stronger and more powerful. The new department head Alfred Haesner, who assumed his position on April 1st, made sure of this, combining the various technical development divisions of the company into one. The first step involved subdividing the Design Office into three units – Design Oversight, New Design Development, and the Standards Office, which was responsible for revising general standards and setting standards for tools. After three months of preparation, the testing center was removed from the experimental facility and reconfigured with new personnel by October 1, 1948. It comprised the working areas Engine Testing, Drive Testing, and Measurement. After the repair division was split off, the experimental facility was reorganized and, in August of 1948, reintegrated into the Technical Development Department as a prototyping unit that concentrated on technical improvements of the Sedan and constructing special vehicles. Lastly, in September 1948, a patent office was added to it that was henceforth called upon for all contractual matters and negotiations important for patent rights, including with Porsche, Daimler-Benz, Fichtel & Sachs, Solex, and Tatra.[394]

Persistent Material Shortages

Under General Manager Nordhoff, as before, the procurement of raw materials determined day-to-day business at the factory, particularly since the transition to a set global quota in early March, 1948 only conditionally met the company's expectations. The new process earmarked 10,000 tons of iron and steel a month for the automobile industry and, at the same time, set forth the maximum possible production of automobiles for 1948. Up to this limit, ac-

cording to Wenk, the supply of spare parts and other materials was guaranteed. Beyond this limit, however, one would have to expect shortages, particularly of tires. The quota of 10,000 tons included the production for the Allies, for the export business, as well as for orders from quota bearers like the Reichsbahn or the Reichspost. As no decision had yet been made concerning how to distribute the global quota among the individual automobile manufacturers, the Volkswagen factory was not able to make production plans for the current year before the end of March, 1948. Thus, it was to be feared that the provisions affected by purchasing would not be fully covered by the global quota, and that part of the incoming raw materials for 1948 would, therefore, not be able to be processed in production because other materials would come up short. But an imbalanced stock harbored dangers in view of the upcoming currency reform. Aside from this, there was a fundamental disagreement between the VfW and the Main Administration of Roads about whether the quota was a global one or an advance.[395]

As had been feared, the new quota regulation did not fundamentally improve the distribution of raw materials and spare parts, even though the Volkswagen factory did register a slight rise in the monthly production of vehicles in the first half of 1948. In March 1948, 1,200 cars left the assembly line – 100 fewer than planned. The following month, 1,250 instead of 1,400 vehicles were built. Production meetings in the first half of the year demonstrated that difficulties in procuring materials persisted. Rubber door seals, tires and tubes, rubber mats, gaskets, cardboard for the trunks, fuel lines, brake drums, and paint were either scarce or temporarily unavailable. The backlog of 68 auto bodies in mid-May 1948 was due to a shortage of rear side panels. At the end of June, the upholstery line stood still because there were no spring cores for the front seats. Although the Foreign Trade Office and the JEIA had stepped up their efforts to import scarce materials, these things were occasionally three times as expensive to buy from foreign suppliers.[396]

In mid-June 1948, Nordhoff complained about the inadequate material supply to the VfW as the head of the "Fahrzeugbau" (Vehicle Design Division), Wenk, had agreed to increase the rationed weight per vehicle from 850 to 1000 kg. Moreover, as the allotted spare parts in no way covered the demand, Nordhoff criticized the current regulation as insufficient. Wenk clarified, in his defense, that he had tried to get a fifteen percent increase in the rationed weight at the special section for economic planning. But the responsible parties there did not wish to issue any new regulations since the currency reform was imminent. At the same time, this was the reason that the Volkswagen factory was literally bombarded with ration cards as all the customers pushed to have their vehicles delivered before the currency change. Because the company could not meet the demand, it found itself accused of intentionally withholding cars. Put out by this, Nordhoff told the VfW that he seriously considered "stopping delivery altogether as all the suppliers are doing to us."[397]

Nordhoff at the Boiler of the Power Plant,
July 3, 1950

Plans for Merging with Ford

In the months before the currency reform, the stagnating and shrinking markets gave Nordhoff little cause for optimism. On the contrary, he was rather concerned about the long-term survival of the company. Thus, he agreed with the Industry Division's deliberations to transfer the Volkswagen factory to the Ford Motor Company and to concentrate the passenger car production of the Cologne Ford factory in Wolfsburg. In this way, Nordhoff believed he would be able to acquire the necessary capital reserves and to advance the technological modernization of the factory. A merger with Ford, moreover, seemed like an advantageous arrangement for clearing away the foreign trade restrictions, and particularly the price fixing. The U.S. manufacturer was open to these plans and, after visiting the plant in March 1948, expressed its interest in a takeover. Ford regarded the Beetle as a unique vehicle that, with a few improvements to its design, materials, and production, had a dazzling future. That same month, Henry Ford II held exploratory talks with Nordhoff while visiting Europe.

Ultimately, Nordhoff was the one who took the initiative, and in April 1948, he once again put forth the question of a takeover in a letter to Ford. The U.S. automobile manufacturer decided to acquire a minor share of the Volkswagen Company in order to prevent unpleasant reactions to the foreign takeover. The planned merger met with a divided response among the relevant British military agencies. The Industry Division welcomed the plan as one way to improve the capacity utilization of the plant and to bring a breath of fresh air into the management. The Property Control Branch, on the other hand, had favored transforming the company into a public enterprise and rejected any talk of a private sale. Its veto must have played a role in preventing the marriage of the two automobile manufacturers. While Nordhoff and Radclyffe cleaved to the merger plans, Ford began to retreat in October 1948 because the unresolved issue of ownership and the financing of the transaction, meanwhile, had grown into insurmountable difficulties. After the Berlin Blockade of 1948/49, Ford put its expansion plans for Europe on ice for the time being.[398]

Until the fall of 1948, the future of the Volkswagen factory as an independent company hung by a thread. Its survival was probably due to the differences between the British military agencies just as much as the cowardly behavior of the U.S. manufacturer. That Nordhoff did not switch over to Ford despite numerous invitations would prove to be advantageous for the further development of the Volkswagen factory in several ways. At Opel, Nordhoff claimed, he had learned what good service meant. He brought his experiences to bear on the development of the sales and customer service organization, which was brought into a unified Volkswagen line.[399] However, it was not only in this area that Nordhoff met the expectations of the British custodians. Cost reduction, quality policy, and product diversification were further fields of activity that he systematically addressed in British terms. The currency reform created an advantageous framework for this.

5.2 Market Competition and Product Policy

Overnight, the display windows of retail stores filled with goods that the average consumer had not seen for a long time. Cooking pots, toothbrushes, books, and other long-awaited commodities came to light from hidden hoards, and consumers could now buy them without ration cards. Theoretically, at least, a Volkswagen could be delivered within 8 days for 5,300 DM. Even cows reacted positively to the currency shift because the quantity of butter delivered rose significantly in the first week of the new DM.[400] The psychological impact of the "display window effect" was lasting, playing a role in the currency reform and becoming a core part of the founding myth of the Federal Republic of Germany. Most contemporaries regarded not the proclamation of the "Grundgesetz" on May 23, 1949, but the distribution of DM bills as the beginning of a new epoch. If one image has embedded itself in Germany's collective memory as an "icon" of a new beginning, then it is the long lines in front of the bank counters where a bounty of 40 DM was exchanged at a 1:1 ratio.[401]

The Boom after the Currency Reform

And at the Volkswagen factory? "Everything changed in Germany like flowers in the desert after a strong rain. There was a new feeling of optimism, and steel, etc., could now be delivered. Production at Volkswagen increased." This is how Hirst remembered the psychological and economic effects of the currency reform.[402] Its short-term effect on production was, indeed, amazing. The volume of deliveries grew from 3.7 million DM in June to 9.3 million DM the following month: production rose from 1,135 Beetles in May 1948 to 1,806 in July, and 2,306 in December. This increase was due, at least in part, to the release of raw materials that had been hoarded before and were only exchanged in barter deals.[403] This was not only common practice among the suppliers but also in the entire industrial economy, which had already hoarded away a significant part of production in storage.[404] In the factory, as well, the German and British management had sown important seeds for the growth of production in 1947. The currency shift, however, was a decisive prerequisite for harvesting the fruits of earlier efforts.

The currency reform, which was largely planned by the Americans, eliminated the surplus of money that had developed during the war and abruptly put a stop to black market trade. This once again established a foundation for companies to be able to make reliable cost calculations and conduct investment planning. The reform also owed its success to the initiative of VfW Director Erhard, who combined the introduction of the D-Mark with economic reforms and, for the most part, revoked the rationing and price control measures with the "Leitsätzegesetz" (the Guiding Principles Law) of June 24, 1948. This meant that price-driven markets took up their function practically overnight.[405] The currency and economic reforms ended the economy of scarcity in West Germany and gave the automobile industry, for which there was an enormous demand in Europe on account of the war losses, the necessary growth spurt. The Volkswagen factory would profit from this: in 1948, it was utilizing only one tenth of its manufacturing capacity of 250,000 cars a year.[406]

These reforms in the political and economic order created an advantageous framework for the tasks that the new leadership faced as well. The D-Mark generated purchasing power and once again set performance incentives for the workers while the food supply began to normalize, increasing their physical capabilities and reducing the number of absences. This diminished the quality deficiencies caused by exhaustion or a disinclination to work. In addition, the easing material situation made it possible for the Volkswagen factory to carry out long overdue machine repairs and to close gaps, particularly in the machine tools as the quality of the materials and the vendor parts also successively improved.

The smooth currency transition, of course, did breed a short-term liquidity problem because the Reichsmark assets of the company were devalued at a ratio of 10:1, but the salaries and wages were converted 1:1 into the new currency. The cash balance of 495,000 DM was faced with monthly wage payments of about 1.5 million

DM. The company closed this financing gap with credits that it was able to pay off in the fall thanks to the rapidly growing proceeds from car sales.[407]

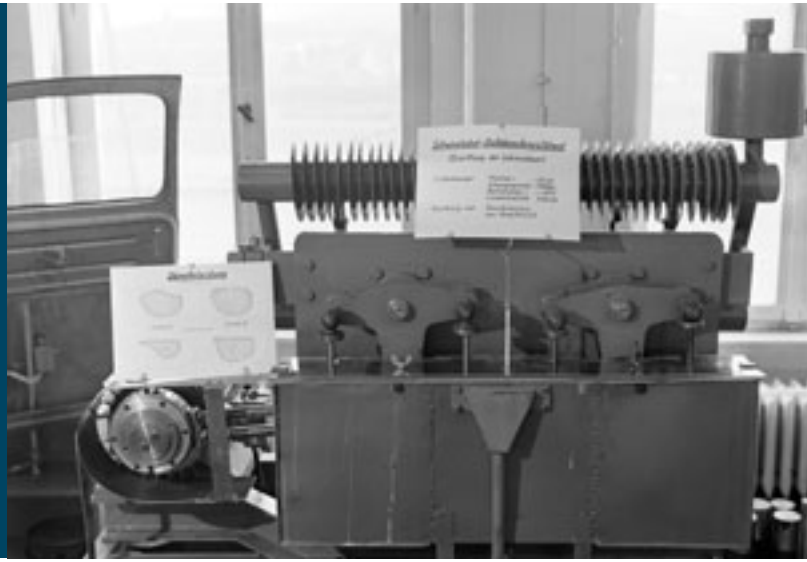
Even after the currency reform, the sale of the Beetle was at first restricted in the domestic market by the qualification certificates that were still circulating. The auto industry had pledged to the VfW that it would preferentially supply cars to the holders of these certificates. Yet complaints that this agreement was not being upheld proliferated, especially in regard to the Volkswagen factory. In fact, in mid-August 1948, Nordhoff had instructed some dealers to put off the holders of these certificates because, after the currency reform, many of these customers were not in a financial position to take on a vehicle. Volkswagen thus turned to other delivery obligations, particularly since a significant number of buyers, including doctors, industrial enterprises, and self-employed persons had received nothing under vehicle rationing. Nordhoff responded to the accusation of the VfW by saying that the Volkswagen factory would have to be able to deliver a greater number of cars that "were not burdened with a mortgage of the Economic Administration."[408]

Regardless of the difficulties, Volkswagen production experienced an enormous boost and supplying the domestic market developed into one of its main businesses. The currency reform marked the beginning of a new epoch at the Volkswagen factory. For the first time, the company gained a direct influence over the distribution of its increasing automobile manufacturing. While the demands of the occupying powers dropped to 8 percent of the deliveries in the second half of 1948, production for the civil demand blossomed. Free-market buyers rose to the top with 74 percent of sales, followed by public establishments with 15.1 percent, the health sector with 8 percent, and the energy and heat sector with 2.9 percent.[409]

Quality Policy and Cost Reduction

With the currency reform, the Wolfsburg manufacturer entered the competitive market – a sharp break and new territory for the Volkswagen factory, which had been conceived of and established under National Socialism as a Ford-style factory but not as a commercial enterprise. Nordhoff perceived the Volkswagen factory as an exceptional case in that "it never had to bear itself up against the competition," which is probably why even the management stemming from the prewar period exhibited no well-developed cost awareness. Nordhoff assessed the competitiveness of the Beetle to be different on the domestic and export markets: Whereas he considered the design "still unparalleled," he demanded great care in the workmanship in order to raise the product quality. His judgment of the price of the car, however, was harsh and clear:

Test Station in the Laboratory, 1954



not competitive. He considered the main cause for this to be the insufficient utilization of the plant's enormous capacity. In this, the currency reform had a cost-reducing effect because it raised the production volume within a very short time above the 1,500-cars-a-month mark set by Nordhoff. The second factor that made the car's price too high was the low productivity: at 200 hours per car, the production times for the Volkswagen Beetle were twice as high as those of comparable competitors' vehicles. Thus, the general manager demanded the workers to reduce the production time by 140 hours and to mobilize all their reserve capacities.[410]

These drastically necessary cost reductions were to be achieved by raising productivity as well as by cutting the size of the administration and simplifying organizational procedures. Nordhoff was a good choice for these tasks as he had "for years led the indisputably most efficient European automobile factory," as he told the workers with typical self-promotion in a speech on May 25, 1948.[411] The General Manager ended the phase of improvisation that had been necessary during the economy of scarcity. In addition, he focused on orienting product policy toward the coming competition: on the one hand, by continuously increasing the quality of the Beetle, and, on the other, by expanding the model palette, which consisted of a single type of car. Nordhoff had fulfilled what was probably the most decisive prerequisite for this when he restructured the Technical Development Department starting in April 1948. In 1949, another important step followed the previous year's expansion of the Department. New machinery put the experimental facility in a position to carry out new development without outside help.[412]

Technical Development became the crux of Nordhoff's product policy. Despite the quality gains achieved by the end of 1947, his widely circulated assessment of the Beetle – that it had more faults than a dog has fleas – was no exaggeration. Many of the flaws taken care of in 1948/49 had been tackled before but had not been satisfactorily resolved for the coming competition. Among these, for example, was the Beetle's difficulty starting cold, which Nordhoff attributed to the rather primitive carburetor production. The Technical Development Department was asked to solve this problem with the manufacturer Solex as quickly as possible since export to Scandinavia was planned for the fall. Another rather small fault was easier to fix but had a large and visible effect in Nordhoff's eyes: "The Volkswagen has the worst headlights of all German automobiles. Consequently, no car is as unpleasantly blinding to oncoming traffic as the Volkswagen."[413] He suggested to the Technical Development Department that the probable cause of this was the angled position of the outer lenses, which elicited a bad reflective effect; in addition, he pointed out that the headlights and Bilux bulbs were possibly of poor quality.

Nordhoff made the further development of the Beetle a matter for management. Pursuing a product strategy based in cost awareness and market orientation, he transformed the Type 11 bit by bit into an internationally competitive vehicle. With an eye on the competition, he stopped the installation of new seats intended for the standard model because he did not consider it necessary for the Beetle's seat quality to be better than that of the models that had established themselves in the middle class, the Opel Olympia and the Mercedes 170 V. The already ordered material was to be used in the Volkswagen's export version. For the standard model, Nordhoff envisioned a seat that would improve quality by being manufactured with more care without raising costs.[414] The previous month, the General Manager had approved Technical Development Department head Haesner's suggestion to replace the safety glass in the rear window – which was not required by law – with simple plate glass. With the production quantity calculated for 1949, the estimated savings of 2.43 DM per car added up to 100,000 DM.[415]

Cost neutral quality improvements, on the one hand, and savings without visible quality reductions, on the other, were the components of Nordhoff's product strategy. At its core, however, Nordhoff's product policy aimed to raise vehicle quality while also reducing costs, which required extensive technological modernization in some manufacturing areas. This was especially true of the press shop, which Nordhoff described as "tin-smithing" after inspecting it at the end of 1948. In his status report on the shop sent to Steinmeier on December 23, the General Manager complained of its lack of cooperation with the Planning, Purchasing and Construction Departments. Aside from the poor lighting, the electrical shop that resembled an "alchemist's kitchen," and the general lack of order and cleanliness, Nordhoff regarded the fundamental weakness of the press shop as the fact "that for tool-making too little and for manual work too much is spent." With the large quantities produced at the Volkswagen factory, top-quality equipment was

Grinding Auto Body Shells

cheaper, he said, "than always hiring new tin-smiths who try to with arduous hammer strikes and grinding work to correct what a proper facility could have falling ready-made from the presses."[416] Nordhoff anticipated savings in the millions if the factory succeeded in transforming the tin-smithing characterized by an unwieldy production process into an efficient auto body press shop. Two things were needed for this in his view: more efficient toolmaking with good designers, modern manufacturing methods, and high quality standards, as well as true cooperation between the above-mentioned departments.

For the coming year, he ordered the logistic link to the press shop to be changed so that trains and trucks could reach it simultaneously. This was one of several instructions for improving the production process that Nordhoff wanted production planners to take into consideration for 1949. Moreover, he assigned the Technical Management with the tasks of dividing the chassis into assembly groups, of joining the final assembly of auto bodies and the paint shop together in Hall 3, of moving auto body shell assembly to Hall 2, and of splitting the paint shop from the chrome shop since that was the only way to achieve flawless paint jobs.[417]

Even though Nordhoff pursued the further development of the Beetle in a significantly more systematic and accelerated manner, some quality issues still took too long to resolve. Above all, the delays were caused by the Technical Development Department being literally inundated with suggestions for change, as well as by the overly broad experimental program, which prevented it from finding quick solutions to the most urgent problems. In April 1949, Nordhoff intervened, distinguishing the important from the unimportant changes, and reminding the department to give more consideration to economic perspectives. This was why precalculation

was soon to be implemented in the development process. Until then, Nordhoff suggested to the manager of the Technical Development Department that the unit "only change and test what is absolutely necessary." In addition to the bad brakes, the General Manager regarded as "really burning issues" the exhaust valves that would not stay on, which seriously jeopardized the reputation of the Volkswagen, the rear axle that was not tight, the juddering clutch, the poor quality of the clutch discs, the front axle that did not perform well in the suspension, road-handling and directional stability, the rear bumper, and the heater switch that did not work.

Even though Haesner was not directly responsible for all of these points, he got the assignment of overseeing the implementation of these changes and of coordinating the cooperation they required in order to remedy these faults by July 1, 1949. Because: "We (...) will be able to build the VW for a long time yet in its present form if we eliminate these faults quickly and thoroughly. It would cost a fraction of what new developments do and, moreover, has a better result."[418]

The defects were eliminated on time and to Nordhoff's satisfaction. He test drove several cars from the last production cycle and characterized them as "very well made." However, he did notice a serious quality problem in all of the tested vehicles, "namely, that they had practically no brake action at all, so that I would describe the cars as downright dangerous in traffic." Compared to the Opel Olympia, the Volkswagen had only 10 percent of the brake action, according to Nordhoff. The Technical Development Department was instructed to address the problem from three angles: by achieving greater precision in production, procuring better brake pads, and by making other design changes.[419]

In September 1949, the Technical Development Department was negotiating with two brake manufacturers, although it favored the Teves design. The new brake system had already been tested and was simpler to build than the Pleines Brake offered by the company L. & C. Arnold, which required two brake cylinders on each front wheel. The "Teves-Super-Bremse" (Teves Super Brake), on the other hand, with floating brake shoes, stood out because of its simplicity and functional reliability; it made it possible to completely utilize the active braking surfaces. In addition, Teves guaranteed that their parts and their brake design would function flawlessly. In a discussion with the brake manufacturer, the Technical Development Department had already set the design details and had arranged for two hydraulic brake systems to soon be made available to the Volkswagen factory and used experimentally on the export model and on the almost completely developed van. Nordhoff expected a quick agreement with Teves and set March 1, 1950, as the date for implementing the new brake system.[420]

Plattenwagen

Expansion of the Model Range

The return of the market put both the further development of the Beetle and the expansion of the array of products on the agenda. Three new models – two convertibles and the transporter – had been initiated after the currency reform when civilian demand dictated the business. Only now did the company find itself in a position to analyze the domestic demand more precisely with market studies and to translate the market-driven requirements into its model development. The sales organization, which worked closely with customers, reported the demand for a small delivery vehicle in German trade and commerce, while Europe's reconstruction gave this sort of vehicle considerable potential on the international market as well. Preliminary ideas for the design of a small delivery vehicle already existed. Inspired by the Plattenwagen built for internal transportation needs at the Volkswagen factory, the Dutch general importer Ben Pon had drafted a sketch of a truck with a loading capacity of 750 kg in a talk with Colonel Radclyffe in April 1947.[421] This sketch, in a way, marked the birth of the Type 2 model, although it is open to question whether this draft drawn with a few strokes truly formed the conceptual foundation for the vehicle's development, which probably began in November 1948.[422] In any case, the styling of the new model followed the "modern design tendencies" of foreign manufacturers, whose models exhibited the following characteristics: the greatest possible utilization of the vehicle floor space for loading and body structures tailored for multiple uses. Haesner named the Dodge Route Van or the Express Delivery Van introduced by Chrysler in 1948 as exemplary models. He was the right man for developing a small transport vehicle as he had previously worked as the chief designer at the Saxon automobile manufacturer Phänomen in Zittau, which had made light trucks in addition to motorcycles.[423]

From the point of view of costs, it made sense to use the technical foundation of the Beetle in designing the Type 29; moreover, this would shorten the development time. Thus, Haesner, Kales, and Ringel agreed to develop an auto body shape that was as simple and cost-effective to manufacture as possible and to place this on an only slightly modified Beetle chassis. The first wind tunnel tests carried out at the Technische Hochschule in Brunswick where the first prototypes were sobering; with a drag coefficient of 0.75, the designers needed to significantly improve the aerodynamics. But this was the smaller problem: after 10,000 km of test-driving, the first prototype revealed that the undercarriage adopted from the Beetle could not withstand the heavier loads. So the Technical Development Department had to go back to the drawing board.[424]

In March 1949, designers embarked on developing a new auto body as well as a chassis, and they had to decide between two technical concepts: a unitized body or a frame construction. Looking at what automakers in the U.S. were doing only helped somewhat. There, both types could be found in the newest models, and experts were divided on which was the better concept.[425] The Technical Development Department elected to continue the model's development with a unitized body, even though the German automobile industry had little experience with this. This meant that the central tubular platform frame of the Type 11 was replaced with a floor assembly of sturdy frame sections. This design – with enlarged brakes, a stronger front-wheel suspension, and larger bumpers, as well as the countershaft transmission on the rear wheels that was used in the jeep – formed the undercarriage of the Type 29. The main characteristic of the new body shape was the curved front end that not only improved the aerodynamics but also made the car more comfortable by enlarging the footwell.[426] It was indicative of the Technical Development Department's efficiency that a prototype almost ready for serial production was available in mid-September 1949. The new design helped lower the drag coefficient from 0.75 to 0.44, which approached that of the Beetle (0.39). This reduced fuel consumption and doubled the acceleration values. "With this," Haesner observed, "it seems that, on the Type 29, the attainable optimum has been reached for a delivery vehicle with the greatest utilization of space."[427]

Whereas the Wolfsburg company developed the transporter on its own, the convertibles resulted from a cooperative process that divided the labor with the auto body firms Karmann and Hebmüller. Volkswagen supplied the chassis, body shells, components and parts; the auto body makers designed and manufactured the body structures in close coordination with the Technical Development Department of the company. Open versions of the Beetle had been built in small numbers even before the war, and the British factory management, too, had expressed interest early on in this sort of model. At the end of November 1946, Hirst sought information about the delivered prototypes that, up to then, the auto body makers had been commissioned to produce, asking also what the unit price would be for a small batch and how many the companies could supply per month. By then, the auto body firm Karmann lo-

cated in Osnabrück had delivered two prototypes, and the auto body plant Karl Deutsch GmbH had delivered one. The further development of the company, which was struggling with worsening material shortages after production had been shut down for three months, made any thought of serial production obsolete. Instead, a few more individual units were produced in 1947 when the British custodians ordered them until Nordhoff took on the matter, pursuing the systematic development of a convertible.

Nordhoff felt that the previously built prototypes were not suitable for serial production, and he criticized the aimlessness of the developmental work that had already been done. Although he typically urged haste, on this issue, he did not wish to rush anything to prevent "rings being run around a car in the workshop in the fashion typical up to now, without anyone knowing which way he wants to go."[428] As he told Haesner in May 1948, there needed to be complete clarity about a concept before the Volkswagen factory undertook the manufacture of a convertible. The question of whether materials were even available for an open version of the Beetle would have to be considered in the decision-making process.

The convertible project began at the end of 1948 with two parallel developments: Karmann was commissioned to design a four-seat vehicle, and Hebmüller, an auto body maker in Wülfrath, was commissioned to design a two-seater. This established competition between the two firms, which put Volkswagen in a good position for negotiating prices and limited its risk of coming out of the deal empty-handed if a company developed a bad design. Nonetheless, Volkswagen hoped from the beginning that both development plans would come to fruition, expanding the model range with two different convertible designs.

A number of problems had to be addressed before these models were ready for the market: For example, the test vehicle Hebmüller presented on March 21, 1949, had significant faults in the floor assembly, the doors, the front and rear sections, as well as in the top – all of which, "except for small details," had been eliminated in the second prototype. After this, Feuereissen requisitioned a third prototype that matched the "future serial standard" including the "final strengthening of the design without any deviation."[429] On June 9, 1949, Hebmüller received an order "to manufacture 675 convertible body forms (...) according to the guidelines set by the Technical Development Department of the Volkswagen factory and to mount them on the chassis supplied by the Volkswagen factory."[430] The Volkswagen factory made 200,000 available to the firm to get set up with the necessary tools and equipment, as well as to pay the design and development costs that had accrued since April.

The Convertible Models by Karmann (front) and Hebmüller (back)

Doubts about whether this cooperative arrangement could be sustained cropped up when Chief Inspector Orlich went to Wülfrath to check the quality of the vehicles produced there and assessed it as poor. In his view, the workers had not been adequately trained in the manual tasks to produce a convertible that met Volkswagen's standards. In order to avoid difficulties with the dealers and customers, Orlich recommended that the Volkswagen plant switch to manufacturing the convertibles itself as quickly as possible. The problems grew worse when a fire on June 23 damaged the Hebmüller factory so severely that the company could not meet its delivery obligations. Up to this point, Hebmüller had delivered 53 convertibles and 236 police patrol cars. The parties to the contract agreed to complete the production of the 43 semi-finished convertibles. Forty of the 82 chassis from Volkswagen that had survived the fire undamaged were transferred to Karmann for further processing.[431]

Volkswagen's two-track development of the convertible now turned out to be advantageous. In mid-April 1949, Karmann had presented its four-seat prototype, which Nordhoff liked. The company was then commissioned to build a convertible for the Testing Department based on the new export model. The two prototypes delivered in June 1949 bore defects in the doors, the tailpiece, and in the canopy; Karmann fixed these faults, presenting a new prototype to the Wolfsburg Testing Department that ran for 15,000 km without any issues. On July 22, Karmann began production on 25 display cars ordered by Volkswagen, and on August 1, 1949, it received a contract to manufacture 1,000 convertibles at a net unit price of 1,900 DM. Just like Hebmüller, Karmann got an advance of 200,000 DM to make tools and equipment that was to be repaid with a discount of 200 DM per auto body.[432]

Assembling the Sedan, 1950

Aside from developing the new models, the Volkswagen factory management focused in 1949 on reducing manufacturing costs. Based on planned sales of 40,000 vehicles, it issued an extensive cost plan for the first time that allocated firm budgets to individual departments. With this, the company had a better overview and was better able to control the internal expenditures – an indispensable requirement for increasing its competitiveness on the domestic and international markets. The new cost control system already generated positive results by the end of the year: the manufacturing costs of the standard Beetle dropped from January to December 1949 from 3,312 to 3,072 DM per vehicle, which made them nearly 200 DM cheaper than budgeted. The export model introduced in July, too, with a decrease of 138 DM in the manufacturing costs, cost less than had been budgeted for it through the end of the year.

Under Nordhoff's leadership, the Volkswagen factory had been able to enter the domestic and European markets in 1948/49 successfully. His appointment paid off for the British. Their interest in exporting was integrated into a volume-oriented company strategy that attached great importance to the foreign sales in light of the weaknesses of the domestic market and of the available capacities.[433] In this respect, both actors worked in concert, even though they did so for different reasons. In 1948/49, the Volkswagen factory was the leading exporter among German automobile manufacturers, which benefited the company and the custodians. In addition, Nordhoff strengthened the company's efficiency and competitiveness, especially by implementing the functional organizational structure, the measures to reduce costs, the product strategy aiming to improve quality, and by enhancing the organization of sales and customer service. In all of these areas, he was able to tie in to work that which had already been done. The expansion of the array of models, on the other hand, originated with Nordhoff, contributing to the competitiveness of the company. In 1949, the Volkswagen factory was able to upgrade its status in foreign markets and reinforce its leading position in the domestic market.

In the home market, the Volkswagen Beetle already enjoyed great popularity, even though only a relatively small number had been sold to private customers. The Bielefeld market research institute EMNID came to this conclusion based on its "Analysis of Public Opinion on Questions of Automotive Engineering" conducted in the summer of 1949, supporting the "perceived popularity of the Volkswagen" with numbers. The key question the analysis had asked of a wide circle of interested parties – principally car owners and drivers, automotive mechanics and dealers – read as follows: "Which personal vehicle being built again today do you consider, independent of its size category, to be the best of its type?" Forty percent of respondents chose the Volkswagen, 24.1 percent the Mercedes, 21.7 percent the Opel. Ford with 7.6 percent and BMW with 5.1 percent brought up the rear. In addition, the question of which car line was the nicest, the answers to which were sorted by job sector, indicated that the sedan "was certainly something like a Volkswagen."[434]

The export model (Type 11 A) that was presented in 1949 disclosed the developmental potential that was hiding in the standard Beetle. This model had upscale amenities and also technological innovations. The same was true of the two convertibles, which upgraded the product line with their sportiness and elegance and, along with the export model, brought more glamor to the brand. In early July 1949, Volkswagen tested public response to the new models with special exhibitions – which doubled as opportunities for publicity – on all of its wholesale lots. The convoys from the wholesale sites to the dealerships, in any case, did not fail to make a splash, causing orders to abruptly soar.[435] An appraisal of the exhibitions in Essen and Cologne determined that Volkswagen had underestimated the demand for the export model. 70 to 80 percent of those attending the exhibitions favored Type 11A, and more than half preferred the car color green. For the standard version, respondents preferred the color gray, whereas black had almost no appeal. In the case of the black convertibles, as well, customer opinion indicated that the color of hubcaps should be switched to ivory.[436]

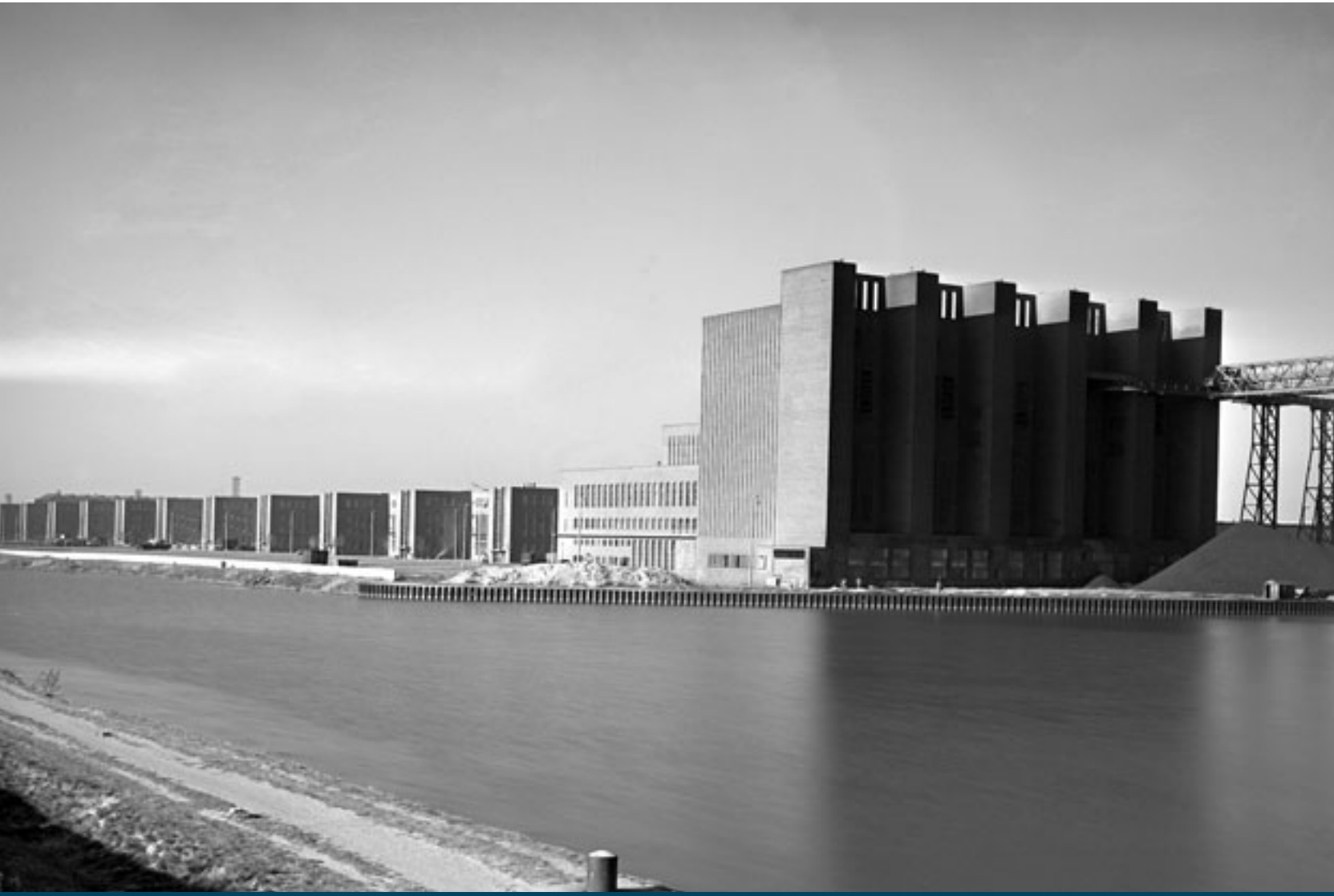
The special exhibitions and the Sales and Customer Service Department assessment of them signaled that Volkswagen had correctly read the spirit of the times. Market competition placed new demands on the company, which made various efforts to orient its products to the customers and to become a brand that customers associated with specific attributes. The structural differentiation of the sales and customer service sector in the summer of 1948 served this purpose. Two new departments were integrated, which were in charge of advertising and "Sales Statistics and Market Analysis," respectively. The latter became increasingly important in 1949 because it provided the company and the sales organization with detailed information about Volkswagen customers, competitors' development, and the state of the domestic market.[437]

Targeted product advertising was in no way necessary at this time because the demand was growing and delivery times for the Beetle stood at seven to ten months. Thus, the new units of the organization created to support sales were preventive measures the company used to arm itself for keener competition.[438] But the Advertising Department was not idle. It provided the growing sales structure with the "Volkswagen Information Service," with brochures, posters, photos, and other means of advertising, including 2,185 signs with the label "VW-Dienst" (VW Service), which constituted the first step toward generating a uniform corporate image for the brand. In addition, the Department organized 150 screenings of the film "Kleiner Wagen – große Liebe" (Small Car – Big Love), which advertised the Volkswagen Beetle in an entertaining way and was a big hit according to the dealers.[439] All of these efforts proved that Volkswagen had truly entered the market.

5.3 Putting the Company in German Hands

At a discussion at the Volkswagen factory on June 3, 1947, Property Control Officer Neal broached the subject of the legal form the company would take in the future. Shortly beforehand, he had gone to the headquarters in Berlin and discovered that the British authorities intended to put the factory in German hands. The suggestion that he himself submitted provided for the factory management to be transferred to a directorate of custodians. The company management was to be accountable to a committee of representatives from the highest governmental offices, the unions, the state government, the banks, and local interested parties.[440]

With this, Neal more or less reproduced the solution that the Property Control Branch had sent notice of, although he took it a step beyond this model preferred at the time by including the participation of banks and communal interests. The trust company that was to be formed was to include representatives from the state and federal governments, and the Board of Directors was to have representatives from the union and the various state governments. The Property Control Branch's strict vote for a public company was remarkable in that it constituted a certain continuation of the original company form. However, the Property Control Branch's effort to make the Volkswagen factory an example of a democratically controlled industrial enterprise was rejected by the Industry Division, which did not agree with the socializing aspects of the idea.[441]



The Factory from the Southeast

It probably would have been easiest to follow the provisions of Control Council Law No. 50, which had been passed in April 1947, and to hand all the assets of the German Labor Front over to the respective state governments, as long as they did not belong to a union, cooperative association, or charitable organization. But the Military Government expressly excluded the Volkswagen factory from the directive and kept control of it for itself. One reason for this was the rights to ownership that the German unions had reclaimed. These rights were based upon the principal argument that the German Labor Front, and with it, the Volkswagen factory, had been built up with assets confiscated from the unions broken up in 1933.[442] Although the Military Government did not share the unions' point of view and Directive 50 offered leverage on this issue, it did not definitively reject the claim but left it unresolved. Former participants of the KdF (Strength through Joy) savings plan also made demands, seeking the delivery of a total of 267,000 Volkswagens or the return of their savings deposits, which would have driven the Volkswagen factory into bankruptcy. The "Volkswagensparer" (VW Savers) filed a class-action lawsuit in May 1949, triggering a costly civil case that was settled by means of a compromise only after 12 years. This case constituted a further reason for the Military Government to maintain the status quo until a German federal government that was about to be formed could get the ball rolling on these issues.[443]

In July 1949, the Property Control Branch offered the state of Lower Saxony direct control of the Volkswagen factory. But the incumbent coalition government under the Social Democratic prime minister Hinrich Wilhelm Kopf declined on account of the uncertain liabilities of the company. Instead, it preferred to take on the role of a custodian under the auspices of the future federal government.

Kopf's stance changed after the parliamentary elections in September 1949, which brought a conservative administration under Konrad Adenauer into office. This was because Social Democrats feared that the control of the factory would be transferred to Federal Minister of Economic Affairs Erhard, so that it would be crushed by liberal economic policy. The state government reclaimed responsibility for the factory, explaining that this would be a test case for the division of authority between the federal and state governments. The British Military Government responded to this demand with Decree 202, which transferred control of the factory to the state of Lower Saxony on the condition that it be exercised together with and under the direction of the federal government. With this, the British Military Government had made a "masterpiece of ambiguity,"[444] delegating the Volkswagen factory to two different authorities without making a clear decision about the question of ownership.

Transfer of the Volkswagen Factory to the German Federal Government, October 1949 (from right to left: Erhard with Radclyffe, Nordhoff, Haverbeck)

Conflicts between the Federal and State Governments

The first tussles about authority already cropped up in the run-up to the official transfer. On September 27, 1949, the *Hamburger Abendblatt* reported under the headline "Return of Reich Property – the Volkswagen Factory in German Hands Again" that Minister of Economic Affairs Erhard would take over the custodianship of the Volkswagen factory on October 1.[445] As the *Welt* reported three days later, government circles in Lower Saxony were estranged by not having been invited to this event. Fearing that the state government had been passed over, the Lower Saxon Minister of Finance, Christian Democrat Georg Stickrodt, demonstratively had the Lower Saxon flag raised.[446] These tensions marked the prelude to a ten-year conflict of ownership between the federal and state governments, in which both sides laid claim to being the sole owners of the Volkswagen factory. Whereas the one side relied on the legislative powers of the federal government and hoped to resolve the ownership question in its favor after the legal framework had been clarified, the governing coalitions in Hanover invoked occupation law. In their understanding of the law, Volkswagenwerk GmbH, as a Nazi organization, had been dissolved and its assets had been transferred to the state of Lower Saxony.[447]

But not only was there conflict between federal and state governments on the eve of the company's transfer: a controversy also arose within the federal government between the Federal Ministry of Economic Affairs and the Federal Ministry of Finance, which would play an important role in the later debate about the privatization of the Volkswagen company. Referring to the press releases, Federal Finance Minister Fritz Schäffer expressly pointed out the unclarified ownership issue at the Volkswagen factory to fellow Minister Erhard on October 4, 1949, reminding him to respect the regulatory authority of his ministry. Lack of communication between the two ministries had given Schäffer the impression that Erhard wished to effect the immediate takeover of the Volkswagen

factory as a federal property. The federal finance minister countered this, with reference to British Decree 202, by emphasizing that the ownership question could only be resolved by a future federal law and that one should avoid giving the impression that the federal government wished to make final decisions. Otherwise, Schäffer expected there to be political attacks from the German Confederation of Trade Unions, which asserted equal claims to the former company of the German Labor Front. After discussing the matter with his state counterpart Stickrodt, Schäffer advocated that the state of Lower Saxony should take over the company, and he advised against a minister or state secretary taking part in the official event as a representative of the federal ministries involved.[448]

But Erhard was not going to forego personally attending this opportunity for effective publicity, particularly since it was to take place in his ministry. He and Lower Saxon Deputy Assistant Under-Secretary Edgar Haverbeck were present when Colonel Radclyffe handed the custodianship of the Volkswagen factory over to the federal government on October 8, 1949. The federal government, in turn, then transferred the administration of the company – to be exercised under its authority – over to the state of Lower Saxony. A CCG memorandum about the official act listed the assets of the Volkswagen factory: with a workforce of about 10,000, monthly production amounted to 4,000 to 5,000 vehicles; business prospects were good; the cash reserve had accrued to above 30 million DM since the currency reform and everything seemed to indicate that the Volkswagen factory under Nordhoff's leadership would enrich the West German economy.[449]

Way Ahead of the Competition

The Volkswagen factory's transformation into a commercial enterprise effected under British control gave the company a respectable competitive edge: Opel only introduced the postwar Olympia in November 1947, Ford produced the first 571 autos of the Taunus type in 1948, and Daimler-Benz reached the 1,000-vehicles-a-month level in the production of its 1.7-liter model in February 1949.[450] However, Volkswagen's leading position was only partly due to its own development. Rather, Ford and Opel lagged behind because the parent companies in Detroit were reserved and undecided. General Motors gauged the prospects of the German automobile market rather pessimistically and, only reluctantly and without any plans for investment, resumed control of Adam Opel AG. The Ford Motor Company was equally skeptical about the market development in Germany, and its wait-and-see attitude gambled away the favorable starting conditions of its Ford factory in Cologne, which were comparable to those of the Volkswagen factory. Consequently, the bulk of the monetary assets that the German branch had accrued fell victim to the currency reform, and the subsidiary did not succeed in obtaining the necessary funds for expansion from Detroit.[451]

Transporter Prototype, 1949

The postwar development at Volkswagen, Opel, and Ford was reflected in their respective market shares in 1949. The Volkswagen factory more than doubled its sales from the previous year to 45,869 vehicles. While production for the Allies was discontinued, the deliveries for the domestic market tripled to 38,698 cars, giving the Wolfsburg company a market share of 45 percent, followed by Opel with 22 percent, Daimler-Benz with 19 percent, and Ford with 13 percent. The competitors' – and especially Opel's – ability to gain ground lay in the seven to ten-month waiting periods for the Volkswagen Beetle. The Volkswagen Corporation carried about 31,000 sales orders over into the next year, including around 3,000 orders for the two convertibles. By the end of 1949, Hebmüller had only delivered 338 two-seat vehicles, and Karmann had supplied only 363 four-seaters.[452]

With Volkswagen the only passenger car manufacturer in the early occupation period, the fleet customer business more or less fell into its lap. It became the preferred supplier for the Reichspost and the Reichsbahn, and as the agencies were interested in a fleet of uniform type, this promised to be an expanding business. In addition, there were the special-purpose vehicles: the ambulance as well as the police patrol car made in cooperation with Hebmüller.[453] In the export business, too, the Volkswagen factory played the first fiddle for the British thanks to its role as procurer of foreign currency, even though the export quota for 1949 dropped to 16 percent on account of a dollar gap in European countries. In absolute terms, however, the export figures rose to 7,128 vehicles. Of these, 2,385 went to Belgium, 2,039 to the Netherlands, 1,876 to Switzerland, 376 to Sweden, 242 to Denmark, 145 to Luxembourg, and 14 to Austria.[454]

Not yet reflected in these sales figures was the new Volkswagen model, which was to significantly enrich the product line and tap into a new market segment. But the transporter was ready and was presented to the public in November 1949. Before this, Haesner had listed the salient characteristics of the Type 29 for the Sales and Customer Service Department in a thorough product description. These included a modern design, possibilities for a variety of uses, a high hauling capacity, nimble and maneuverable in city traffic, durable and fuel-efficient on long trips, economical to maintain and care for, and reliable even on poor roads as well as in the mountains: "All in all: A utility vehicle with universal practical value for transporting any products to any place."[455] Even though this summarizing assessment was rendered in advertising language, the characteristics that Haesner emphasized were consistent with the product. Conceptually, the transporter manufactured from March 1950 was, in many respects, an innovative and trailblazing vehicle with which Volkswagen was able to position itself well in the rapidly expanding market segment of small transporters both at home and internationally.

Nordhoff had every reason to feel confident because "when automobiles are discussed today in Germany, one means the Volkswagen."[456] As an enterprise administered by the British, the Volkswagen factory was rushed into a pole position from which it took off in the emerging German automobile society to enjoy national as well as international success. Perhaps Volkswagen really is, as the later CEO Carl H. Hahn said with an ironic wink, "the most successful car company ever to have been founded by the British."[457]

6. Outlook

Hahn's Bonmot fittingly describes the further development of Volkswagen. As the leading manufacturer in the German automobile industry, the public company became the engine of the economic miracle and the greatest foreign currency generator in the country. Between 1949 and 1954, vehicle sales increased by a factor of six from about 46,000 to 246,000 vehicles. Around 44 percent flowed primarily into the European export business.[458] The company's rapidly increasing capacity utilization and profitability formed the financial basis for its "Americanization," which began in 1954. With a technological restructuring oriented toward Fordism, Nordhoff sought to gain access to the productivity of the U.S. automobile industry. But the model was not copied 1:1, particularly since the "Detroit automation," as displayed in Ford's new engine factory in Cleveland, made more flexible production methods difficult to employ and was the focus of criticism in 1954. Rather, what emerged at the Volkswagen factory was a typical German version of Fordism. At its core, it was based on a symbiosis of American methods and the dominant German model of diversified, quality production, along with the historically developed system of labor relations. This included cooperation between the management and the workforce that divided the control over the work place.[459] Adapting Fordist technology and organizational structures and the expansion of domestic capacities together provided the framework for the company to make the necessary progress in production and increase in quantity to continue to grow. Supported by exports, this growth course allowed Volkswagen to succeed in the U.S. market. By 1960, Volkswagen had taken on the structure of a multinational corporation, selling nearly 890,000 vehicles that year. The export ratio made up 57 percent: every second exported German vehicle was a Volkswagen.[460]

What part did the British play in this "Wolfsburg miracle?" Their contribution should not be underestimated. The results of this study indicate that the company's "lane change" towards becoming a commercial enterprise was fundamental, allowing it to take advantage of the igniting force of the currency reform and to embark on a lasting period of growth in 1949. Thanks to British initiative, the sales and customer service network was enlarged, so that in 1948, the company could begin to use this to tap into the domestic market. In addition, under adverse circumstances, Hirst established a quality policy – one Nordhoff carried forth by other means – that gave the Beetle a good reputation early on in the European market. The British paved the way for this with their export policy, to which Nordhoff was able to seamlessly tie in his world-market-oriented growth strategy. It could be that the tremendous capacities, which derived from the founding principle of the company, and the weakness of the domestic market made this sort of strategy virtually inevitable. Yet implementing this strategy by means of bilateral trade agreements and on a world market shaped by the dollar gap would not have proceeded at the same pace if the British had not been so interested in exports.

The same is true of the development for serial production that happened under British control. By no means did this constitute merely reconstructing a modern production apparatus that was largely intact at the end of the war. Rather, it involved regenerating an efficient production process that had been handicapped by war damage and the economy of scarcity. This entailed new construction and required the fundamental reform of the company's organizational structure, which had taken on a functional shape by the end of 1947 despite all the difficulties. Nordhoff was able to build upon the basis of these technological and organizational changes, and, in 1954, to finally begin the conversion to Fordist technology. In his public appearances, the General Manager liked to invoke the chaos that he began to rein in, which fit with the foundational legend of the Volkswagen factory. Yet it did not match the reality of the company at the beginning of 1948.[461] The British encountered chaos when they made the conversion of the former armaments factory their task after placing the production order in August 1945. On the other hand, the company that they entrusted to Nordhoff's leadership in 1948 was, for the most part, already viable on the market and, as Hirst later reflected, probably would have become successful under any other leadership as well.[462]

Last but not least, when one looks closely, it becomes apparent that the industrial relations in this economic miracle company were shaped in the British period. On the workforce side, Hirst's concepts of workplace democracy and Münch's cooperative leadership style blazed the trail for consensus-oriented coordination of interests. This advanced the democratization of labor relations and was reflected in the participatory company agreement of 1947. In terms of a co-determination policy, the Nordhoff era represented a step backwards, which the custodians unwillingly contributed to in that their retreat from business operations more or less transferred authority to Nordhoff. He then was able to fill this power vacuum with a concept of leadership that was simultaneously social, paternal, and autocratic. In doing so, he used the weak position of the Workers' Council among the workers as well as the continuity of the idea of a company community. Only when Hugo Bork was elected chairman of the Workers' Council in 1951 did the coordination of interests at the company once again take on the form that had crystallized in the initial postwar years under Münch.

The bottom line is that the developmental steps taken by the British, either alone or in cooperation with the German factory management, comprised a future-oriented contribution for the Volkswagen factory's rise in the 1950s. With regard to the British roots of the quality policy and the cooperative work relations, in any case, the "West German Fordism" at Volkswagen was not just a German-American product, but also a Anglo-German one.[463]

Notes

001
On consumption during the "economic miracle," see Heinz-Gerhard Haupt: Der Konsum von Arbeitern und Angestellten, in: idem/Claudius Torp (eds.): Die Konsumgesellschaft in Deutschland 1890 bis 1990, Frankfurt 2009, pp. 144-153; Michael Wildt: Privater Konsum in Westdeutschland in den 50er Jahren, in: Axel Schildt (ed.): Modernisierung im Wiederaufbau, Bonn 1993, pp. 275-289.

002
Herfried Münkler: Die Deutschen und ihre Mythen, Berlin 2009, pp. 465f.; Erhard Schütz: Der Volkswagen, in: Etienne François/Hagen Schulze (eds.): Deutsche Erinnerungsorte, Munich 2001, Vol. 1, pp. 352f.

003
Volker Wellhöner: „Wirtschaftswunder" - Weltmarkt - westdeutscher Fordismus. Der Fall Volkswagen, Münster 1996, p. 192.

004
Toni Pierenkemper: Die gesamtwirtschaftliche Bedeutung der deutschen Automobilindustrie, in: Harry Niemann/Wilfried Feldenkirchen (eds.): 100 Jahre DaimlerChrysler. Werk Untertürkheim 1904-2004, Vaihingen/Enz 2005, pp. 1749, here p. 23.

005
Christian Kleinschmidt: Konsumgesellschaft, Göttingen 2008, pp. 134f.

006
Werner Abelshauser: Deutsche Wirtschaftsgeschichte seit 1945, Munich 2004, pp. 374-378; idem: Wirtschaft in Westdeutschland 1945-1948, Rekonstruktion und Wachstumsbedingungen in der amerikanischen und britischen Zone, Stuttgart 1975; Ralf Richter: Die Währungs- und Wirtschaftsreform 1948 im Spiegel unternehmerischer Personalpolitik - Volkswagen, 1945-1950, in: Zeitschrift für Unternehmensgeschichte 48 (2003), Nr. 2, pp. 212-238; Albrecht Ritschl: Die Währungsreform von 1948 und der Wiederaufstieg der westdeutschen Industrie, in: Vierteljahreshefte für Zeitgeschichte 33 (1985), pp. 136-165; Wellhöner, Wirtschaftswunder, pp. 307ff.

007
Manfred Grieger: Eine Meistererzählung von Volkswagen und der dazugehörigen Stadt. Der Roman „Die Autostadt" von Horst Mönnich aus dem Jahre 1951, in: Christoph Stölzl (ed.): Die Wolfsburg-Saga, Wolfsburg 2008, pp. 144-147, here 147.

008
Heidrun Edelmann: Heinz Nordhoff und Volkswagen. Ein deutscher Unternehmer im amerikanischen Jahrhundert, Göttingen 2003. According to Münkler, the function of the founding legend of the Bonn Republic consisted principally in explaining away external influences and coincidences and focusing on the country's own achievements: Münkler, Mythen, p. 468.

009
Hans Mommsen/Manfred Grieger: Das Volkswagenwerk und seine Arbeiter im Dritten Reich, Düsseldorf 1996, p. 975; Ralf Richter acknowledges Hirst's role in the reconstruction of the Volkswagen factory: Ivan Hirst. British Officer and Manager of Volkswagen's Postwar Recovery, Wolfsburg 2003.

010
Günter Neliba: Die Opel-Werke im Konzern von General Motors (1929-1948) in Rüsselsheim und Brandenburg, Frankfurt am Main 2000, p. 154. On this, see also Andrei I. Miniuk: The Use of German Industrial and Scientific Technical Potential in the Developement of the Soviet Motor Industry, 1945-1950, in: Manfred Grieger/Ulrike Gutzmann/Dirk Schlinkert (eds.): Towards Mobility. Varieties of Automobilism in East and West, Wolfsburg 2009, pp. 73-87.

011
Ian D. Turner: Volkswagenwerk – ein deutsches Unternehmen unter britischer Kontrolle, in: Josef Foschepoth/Rolf Steiniger (ed.): Die britische Deutschland- und Besatzungspolitik 1945-1949, Paderborn 1985, S. 280-300; ibid.: British Occupation Policy and its Effects on the Town of Wolfsburg and the Volkswagenwerk, 1945-1949, Diss. Manchester 1984.

012
Steven Tolliday: Enterprise and State in the West German Wirtschaftswunder: Volkswagen and the Automobile Industry, 1939-1962, in: Business History Review, 69 (1995), Nr. 3, p. 296.

013
Richter, Währungs- und Wirtschaftsreform, pp. 225f.

014
Wellhöner, Wirtschaftswunder, p. 99.

015
Ibid., p. 103.

016
Simon Reich: The Fruits of Facism. Postwar Prosperity in Historical Perspective, Ithaca 1990.

017
Mommsen/Grieger, Volkswagenwerk, p. 975.

018
Ibid., pp. 19ff.; zur Gründung und Entwicklung des Volkswagenwerks im Nationalsozialismus siehe auch Wellhöner, Wirtschaftswunder, pp. 102f.;
Tolliday, Enterprise, pp. 276f.

019
Karsten Linne: „... bisher nur Sonnentage ...". Der Aufbau der Volkswagen-Händlerorganisation 1948-1967, in: Zeitschrift für Unternehmensgeschichte 53 (2008), Nr. 1, S. 5-32, here pp. 7f.

020
Neliba, Opel-Werke, p. 153; Wilfried Feldenkirchen: „Vom Guten das Beste". Von Daimler und Benz zur DaimlerChrysler AG, Bd. 1: Die ersten 100 Jahre (1883-1983), München 2003, pp. 179ff.

021
Richter, Währungs- und Wirtschaftsreform, p. 218.

022
Wilfried Feldenkrichen: 100 Jahre Daimler-Chrysler Werk Untertürkheim 1904-2004, in: Niemann/Feldenkirchen, DaimlerChrysler, pp. 69-85, here pp. 77f.

023
Mommsen/Grieger, Volkswagenwerk, pp. 949ff.

024
Udo Riechert: Neubeginn im Schatten der NS-Tyrannei. Gewerkschaften und Betriebsräte in Braunschweig und Wolfsburg in den ersten Nachkriegsjahren, Braunschweig 1987, pp. 180f.

025
Hans Mommsen: Das Volkswagenwerk und die „Stunde Null", in: Rosemarie Beier (ed.): aufbau west, aufbau ost. Die Planstädte Wolfsburg und Eisenhüttenstadt in der Nachkriegszeit, Stuttgart 1997, pp. 129-138, here p. 130 ; Chief Custodian Preliminary Report vom April 1946, Part I: Business review, p. 1 (UVW, Z 69, Nr. 145/1).

026
Targa an Capt. Henry Lee, XIII Corps, Mil. Govt. vom 14.5.1945 (Unternehmensarchiv der Volkswagen AG (UVW), Zugang (Z) 69, Nr. 130/7).

027
Richter, Hirst, pp. 27ff. and 53; Turner, Volkswagenwerk, p. 285; Fragen an Ivan Hirst vom Januar/Februar 1996, p. 3 (Stadtarchiv Wolfsburg (StadtA WOB), Historisches Archiv (HA)); on the restructuring of the occupation zones, see Wolfgang Benz: Potsdam 1945. Besatzungsherrschaft und Neuaufbau im Vier-Zonen-Deutschland, München 2005, p. 73.

028
Richter, Hirst, pp. 45ff., 52f. and 81; On Hermann Münch assuming his new position, see Vorbericht des Haupttreuhänders o.D. (UVW, Z 69, Nr. 198).

029
Turner, Occupation, p. 182; Richter, Hirst, p. 37; Fragen an Ivan Hirst vom Januar/Februar 1996, p. 2 (StadtA WOB, HA).

030
Bericht an Captain Gower, o.D. [probably from 23. June 1945] (UVW, Z 69, Nr. 130); on the extent of war damages at the Volkswagen factory, cf. Tolliday, Enterprise, pp. 286f., who relies on the United States Strategic Bombing Survey statistics.

031
Aktennotiz über Fertigungs- und Entwicklungsprojekte vom 25.6.1945 (UVW, Z 69, Nr. 198).

032
Hiemenz an alle Abteilungen vom 10.8.1945 (UVW, Z 69, Nr. 154/2).

033
Benz, Potsdam, pp. 72ff.

034
Mommsen, Stunde, p. 131.

035
David Welch: British Political Re-education and its Impact on German Political Culture, in: Karl Rohe (ed.): Deutschland-Großbritannien-Europa: Politische Traditionen, Partnerschaft und Rivalität, Bochum 1992, p. 241.

036
Albrecht Tyrell: Großbritannien und die Deutschlandplanung der Alliierten 1941-1945, Frankfurt am Main 1985.

037
Ulrich Schnakenberg: Democracy-building. Britische Einwirkungen auf die Entstehung der Verfassungen Nordwestdeutschlands 1945-1952, Hannover 2007, pp. 29f.

038
Gloria Müller: Sicherheit durch wirtschaftliche Stabilität? Die Rolle der Briten bei der Auseinandersetzung um die Stahlquote des 1. Industrieplanes vom 26. März 1946, in: Dietmar Petzina/Walter Euchner (ed.): Wirtschaftspolitik im britischen Besatzungsgebiet, Düsseldorf 1984, pp. 65-87, here pp. 66f.

039
Schnakenberg, Democracy-building, p. 30f.

040
Turner, Volkswagenwerk, pp. 283f.; an informative overview of the aims and results of the British Germany and occupation policy can be found in Ian Turner (ed.): Reconstruction in Post-War Germany. British Occupation Policy in the Western Zones, 1945-1955, Oxford 1989.

041
On this, see Werner Plumpe: Wirtschaftsverwaltung und Kapitalinteresse im britischen Besatzungsgebiet, in: Petzina/Euchner, Wirtschaftspolitik, pp. 121-152, here p. 131. On the Morgenthau Plan, see Ulrich Schnakenberg: The Morgenthau Plan, in: Thomas Adam (ed.): Germany and the Americas. Culture, Politics and History, Santa Barbara, Cal. 2005, pp. 772-774.

042
Tolliday, Enterprise, p. 298; Turner, Occupation, pp. 182ff. The particular clause in the Potsdam Agreement allowed for production to begin again in companies that were supposed to be dismantled if the occupying power itself needed the products. On this, see Falk Pingel: Der aufhaltsame Aufschwung. Die Wirtschaftsplanung für die britische Zone im Rahmen der außenpolitischen Interessen der Besatzungsmacht, in: Petzina/Euchner, Wirtschaftspolitik, pp. 41-64, here p. 45.

043
Projekt für die Herstellung von 20.000 Volkswagen o.D. [Ende Juli 1945] (UVW, Z 69, Nr. 198).

044
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 8 (StadtA WOB, HA).

045
Hiemenz an alle Abteilungen vom 10.8.1945 (UVW, Z 69, Nr. 154/2); Military Government Hannover Region, Lieut-Colonel G. L. Lock, an Volkswagenwerk, Wolfsburg vom 22.8.1945 (UVW, Z 69, Nr. 130).

046
Brörmann to all employees o.D. (UVW, Z 69, Nr. 154/2).

047
Richter, Hirst, pp. 41 and 49.

048
Hausmitteilung an alle Abteilungsleiter vom 11.9.1945 (UVW, Z 98, Nr. 3).

049
Müller, Sicherheit, p. 73.

050
Fragen an Ivan Hirst vom Januar/Februar 1996, pp. 2f. (StadtA WOB, HA). Hirst showed himself to be very touchy in early October 1948 in his reaction to a request of the Swedish automobile manufacturer Scania, which had asked to borrow an amphibious vehicle. He prohibited this arrangement and justified his decision by saying that exhibiting an amphibious vehicle might rapidly lead some people to believe that armaments were once again being manufactured at the VW factory; Hirst an Nordhoff vom 7.10.1948 (UVW, Z 69, Nr. 201).

051
Fragen an Ivan Hirst vom Januar/Februar 1996, pp. 9 and 12f. (StadtA WOB, HA).

052
Richter, Währungs- und Wirtschaftsreform, p. 219.

053
Reisebericht über Fahrt nach Helmstedt und Harpke am 30.05.1945 (UVW, Z 69, Nr. 198).

054
Mommsen, Stunde, p. 133.

055
Müller, Sicherheit, pp. 65f. and 80.

056
Cf. Turner, Volkswagenwerk, pp. 283f.; Richter, Hirst, pp. 60.

057
Tolliday, Volkswagen, pp. 290ff.; Mommsen/Grieger, Volkswagenwerk, pp. 970.

058
Schnakenberg, Democracy-building, pp. 46f.; Florian Huber: Re-education durch Rundfunk. Die Umerziehungspolitik der britischen Besatzungsmacht in Deutschland am Beispiel des NWDR 1945-1948, Hamburg 2006.

059
Kurt Jürgensen: Die britische Besatzungspolitik, Zur Frage nach einer Konzeption in der britischen Deutschlandpolitik, in: Aus Politik und Zeitgeschichte 34 (1997), Heft 6, pp. 15-29, here pp. 16f.

060
Schnakenberg, Democracy-building, p. 47; see also Benz, Potsdam, p. 76, who speaks of an American and British crusade for democracy. One guideline that was distributed in German by the British Military Government in February 1946 read: "Our democracy, the most robust in the world, is the product of our country. It prospers on British soil best; but we export it, and if it is carefully maintained and nourished, then it grows and prospers in all sorts of countries." Qtd. in Jürgensen, Besatzungspolitik, p. 16.

061
Richter, Hirst, pp. 43f.

062
Schnakenberg, Democracy-building, pp. 33f.

063
McInnes n 111 Mil. Gov. Det, Gifhorn vom 9.3.1946 (UVW, Z 69, Nr. 130/7).

064
Benz, Potsdam, pp. 162f.

065
Tolliday, Enterprise, pp. 295; Mommsen, Stunde, p. 131.

066
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 11 (StadtA WOB, HA).

067
Mommsen, Stunde, pp. 129.

068
Bericht an Hauptmann Gower o.D. vom 25.6.1945] (UVW, Z 69, Nr. 130).

069
Richter, Währungs- und Wirtschaftsreform, p. 219; Chief Custodian Preliminary Report April 1946, Part I: Business review, p. 2 (UVW, Z 69, Nr. 145/1).

070
Entwurf: Teil 1 Geschäftsübersicht (UVW, Z 69, Nr. 206/1).

071
Sitzung vom 7.9.1946 betr. Werkzeugbeschaffung (UVW, Z 69, Nr. 157).

072
Richtlinien für die Betreuung von Auslagerungsstellen vom 18.6.1945 (ibid.).

073
Targa an Hirst betr. Present state of dispersal plants, 29.9.1945 (UVW, Z 69, Nr. 130/5); Mitteilung an Brörmann betr. Flugzeughallen des Volkswagenwerks in Waggum vom 20.8.1945 (UVW, Z 69, Nr. 153/1).

074
Capt. Gerrard an Stadtkommandant in Eschershausen vom 9.8.1945 (UVW, Z 69, Nr. 130/7); Aktennotiz vom 13.8.1945 (UVW, Z 69, Nr. 198).

075
Deutsche Asphalt AG an Major Hirst betr. Abwicklung der Minette GmbH vom 9.8.1946 (UVW, Z 69, Nr. 155/1).

076
According to the report of Chief Custodian Münch, 70 percent of the production area was destroyed: Geschäftsübersicht zum Bericht des Haupttreuhänders per 31.12.1946, p. 5 UVW, Z 69, Nr. 198).

077
Geschäftsübersicht zum Bericht des Haupttreuhänders über das erste Halbjahr 1947, pp. 6f. (ibid.).

078
Turner, Volkswagenwerk, p. 288.

079
Reisebericht Targas vom 24.8.1945 (UVW, Z 69, Nr. 153/1).

080
Aktennotiz über Besprechung mit der Firma Bosch vom 20.3.1946 (ibid.).

081
Manfred Overesch: Bosch in Hildesheim 1937–1945. Freies Unternehmertum und national-sozialistische Rüstungspolitik, Göttingen 2008, pp. 95 and 291ff.

082
Aktenvermerk Bökenkamps über die Besprechung mit den Dürkopp-Werken vom 31.8.1945 (UVW, Z 69, Nr. 153/1).

083
Brörmann an Verteiler betr. Lenkgehäusedeckel vom 3.1.1946 (UVW, Z 69, Nr. 217/1, Bl. 28).

084
Geschäftsübersicht zum Bericht des Haupttreuhänders per 31. Dezember 1946, p. 4 (UVW, Z 69, Nr. 198).

085
Ulrike Gutzmann/Markus Lupa: Vom „Vorwerk" zum FahrWerk. Eine Standortgeschichte des Volkswagen Werks Braunschweig, Wolfsburg 2008, pp. 8ff. and 26ff.

086
Brörmann an Kurz betr. Zubehör für unsere Fahrzeugproduktion vom 6.9.1945 (UVW, Z 69, Nr. 155/1).

087
Hirst to Fernsprechamt am 5.9.1945 (UVW, Z 69, Nr. 130/7).

088
Finanzbericht für den „Block Volkswagen" vom 9.4.1946, S. 1 (UVW, Z 69, Nr. 206).

089
Geschäftsübersicht zum Bericht des Haupttreuhänders vom 31.12.1946 (UVW, Z 69, Nr. 198); Gutzmann/Lupa, pp. 26ff.

090
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 11 (StadtA WOB, HA).

091
Gefolgschaftsbericht vom 19.6.1945 UVW, Z 69, Nr. 141).

092
Gerrard an 30 Workshop Control Unit vom 31.7.1945 (UVW, Z 65, Nr. 130/7).

093
Major R.E.M.E. an Arbeitsamt Wolfsburg betr. Amended Labour Requirements vom 28.11.1945 (UVW, Z 69, Nr. 130/7).

094
Bettingen an alle Abteilungsleiter vom 11.9.1945 (UVW, Z 69, Nr. 154/2).

095
Schnakenberg, Democracy-building, p. 29.

096
Olaf Reichert: „Wir müssen doch in die Zukunft sehen ...". Die Entnazifizierung in der Stadt Oldenburg unter britischer Besatzungshoheit 1945-1947, Oldenburg 1998, p. 38; on British de-nazification policy, see also Heiner Wember: Umerziehung im Lager. Internierung und Bestrafung von Nationalsozialisten in der britschen Besatzungszone Deutschlands, Essen 2007; Alexander Biddiscombe: The Denazification of Germany. A History 1945-1948, Stroud 2007.

097
Reichert, Entnazifizierung, pp. 23 and 35f.

098
Turner, Occupation, pp. 263ff.

099
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 18 (StadtA Wob, HA); Richter, Hirst, pp. 58f.

100
Hirst an Werkleiter betr. Zuteilung und Kontrolle von gewissen Lägern vom 26.9.1945 (UVW, Z 69, Nr. 130/3).

101
Hirst an Werkleiter betr. Organisation der Werkleitung vom 4.10.1945 (UVW, Z 69, Nr. 130/3).

102
Volkswagen Chronik, p. 18; Chief Custodian Preliminary Report vom April 1946, Part I: Business review, p. 1 (UVW, Z 69, Nr. 145/1).

103
Turner, Volkswagenwerk, p. 299.

104
Richter, Hirst, p. 54.

105
Steinmeier an Hirst betr. Maschinenbedarf vom 10.2.1947 (UVW, Z 69, Nr. 203).

106
Geschäftsübersicht zum Bericht des Haupttreuhänders per 31. Dezember 1946, pp. 4f. (UVW, Z 69, Nr. 198).

107
Großer an Steinmeier betr. Jahresbericht der Mechanischen vom 10.1.1947 (UVW, Z 69, Nr. 230/1).

108
Striebig vom 19.11.1946 (UVW, Z 174, Nr. 1237/1).

109
Abschrift aus dem „Neuen Hannoverschen Kurier", Nr. 5, 18.01.1946 (UVW, Z 69, Nr. 155/1).

110
Großer an Münch betr. Abhilfe vorhandener Missstände in der Fertigung vom 14.4.1947 (UVW, Z 69, Nr. 230/1); Geschäftsübersicht zum Bericht des Haupttreuhänders per 31. Dezember 1946, p. 5 (UVW, Z 69, Nr. 198).

111
Sitzung betr. Werkzeugbeschaffung vom 7.9.1946 (UVW, Z 69, Nr. 157).

112
Bericht über die Tätigkeit der Technischen Leitung im Volkswagenwerk für das Jahr 1947, p. 1 (UVW, Z 69, Nr. 196/1).

113
Kemmler an Hirst betr. Senkung der Produktionskosten vom 9.8.1946, p. 3 (UVW, Z 69, Nr. 150).

114
Arbeitsvorbereitung - Miler an Major Hirst betr. Anforderungen der produktiven Stunden pro Wagen vom 9.10.1946 (UVW, Z 69, Nr. 150).

115
Besprechung über eine Produktion von 2.500 Wagen pro Monat vom 21.6.1946 (UVW, Z 69, Nr. 150).

116
Ibid.; on the changes in the price from January to December 1946, see the business overview in the Bericht des Haupttreuhänders per 31.12.1946, p. 4 (UVW, Z 69, Nr. 198).

117
Minutes of the Eleventh Board of Control Meeting from 6.12.1946, p. 4 and Appendix A: Volkswagen price calculations (UVW, Z 69, Nr. 150).

118
Bericht über die Tätigkeit der Technischen Leitung im Volkswagenwerk für das Jahr 1947, pp. 2f. (UVW, Z 69, Nr. 196/1).

119
Ibid.; Geschäftsübersicht zum Bericht des Haupttreuhänders über das erste Halbjahr 1947, p. 6 (UVW, Z 69, Nr. 198).

120
Bericht über die Tätigkeit der Technischen Leitung im Volkswagenwerk für das Jahr 1947, pp. 4f. (UVW, Z 69, Nr. 196/1); König an Kemmler betr. Bericht über das erste Halbjahr 1947 (UVW, Z 69, Nr. 198).

121
Bericht des Haupttreuhänders zum 31.12.1947, p. 14 (UVW, Z 69, Nr. 196).

122
Ibid., p. 12 (UVW, Z 69, Nr. 196).

123
Striebig an Verteiler vom 30.8.1947 (UVW, Z 169, Nr. 111/1).

124
Hirst an 30 Workshop Control Unit REME betr. Herstellungskosten von Ersatzteilen vom 28.1.1946 (UVW, Z 69, Nr. 130/7).

125
Kemmler an Brörmann/Münch betr. Organisation vom 20.05.1946 (UVW, Z 69, Nr. 220/1).

126
Organigramm des Volkswagenwerks vom Juni 1946 (ibid.).

127
Besprechung über eine Produktion von 2.500 Wagen pro Monat vom 21.6.1946 (UVW, Z 69, Nr. 150); Hirst an Münch vom 10.11.1946 (UVW, Z 69, Nr. 150/1); Revision an Kemmler betr. Tätigkeitsbericht für das Geschäftsjahr 1946 vom 11.4.1947, p. 3 (UVW, Z 69, Nr. 204).

128
Jahresbericht des Haupttreuhänders 1946, Anlage (UVW, Z 61, Nr. 11.001).

129
Nebelung an Kemmler betr. Treuhandbericht für das erste Halbjahr 1947 vom 7.8.1949 (UVW, Z 69, Nr. 198).

130
Schoenebeck an Kemmler vom 6.8.1947 UVW, Z 69, Nr. 198)

131
Minutes of Eighth Board of Control Meeting from 12.9.1946, p. 2 (PRO, FO 943, Nr. 215).

132
Minutes of the Eleventh Board of Control meeting from 6.12.1946, pp. 2f. (UVW, Z 69, Nr. 150).

133
Mommsen/Grieger, Volkswagenwerk, pp. 971f.; Richter, Hirst, pp. 76f.

134
Christoph Kleßmann: Die doppelte Staatsgründung. Deutsche Geschichte 1945-1955, Bonn 1986, pp. 185f.; Karl Hardach: Wirtschaftsgeschichte Deutschlands im 20. Jahrhundert, Göttingen 1993, pp. 125f.

135
Sitzung bei Major Hirst am 23.7.1947 (UVW, Z 69, Nr. 232).

136
CCG, Board of Control, an Münch, Kemmler, Steinmeier betr. Vorstand vom 5.8.1947 (UVW, Z 69, Nr. 207/2); CCG, Board of Control, an Münch, Kemmler, Steinmeier betr. Appointment of a Vorstand or Geschäftsführung for the Volkswagenwerk GmbH vom 14.8.1947 (idem.); Münch an Verteiler betr. Erteilung von Unterschriften am 20.10.1947 (UVW, Z 69, Nr. 112/1)

137
Münch an Verteiler vom 23.10.1947 (UVW, Z 69, Nr. 220); Brodmeier an Münch vom 29.9.1947 (ibid.).

138
Münch an Verteiler betr. Organisation vom 4.9.1947 (UVW, Z 69, Nr. 111/1).

139
Lang und Stolz an Münch betr. Organisation om 27.10.1947 (UVW, Z 69, Nr. 220).

140
Münch an Verteiler vom 23.10.1947 (UVW, Z 69, Nr. 220); Münch an Radclyffe vom 30.11.1947 (UVW, Z 69, Nr. 207/2).

141
Hiemenz an Münch vom 25.9.1947 (UVW, Z 69, Nr. 220).

142
Hiemenz und Nebelung an Münch vom 31.10.1947 (ibid.).

143
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 10 (StadtA WOB, HA).

144
Aktennotiz Laurents betr. Unterbringung deutscher Arbeitskräfte vom 3.7.1945 (UVW, Z 69, Nr. 198).

145
Richter, Währungs- und Wirtschaftsreform, p. 218.

146
Aktenvermerk über die Besprechung mit Bürgermeister Dr. Laurent vom 31.5.1945 (UVW, Z 69, Nr. 198); Aktennotiz Brörmanns betr. Übernahme der Lager und Heime vom 11.7.1945 (ibid.).

147
Richter, Hirst, p. 36.

148
Mommsen/Grieger, Volkswagenwerk, pp. 955f.; on the workforce issues of the Volkswagen factory, see also Monika Uliczka: Berufsbiographie und Flüchtlingsschicksal. VW-Arbeiter in der Nachkriegszeit, Hannover 1993, pp. 18ff. and 40f.

149
Figures for 1946 can be found in Mommsen/Grieger, Volkswagenwerk, p. 955; figures for 1947 in Turner, Volkswagenwerk, pp. 289f.; on the causes of the high turnover rate at the Volkswagen plant, see Richter, Währungs- und Wirtschaftsreform, pp. 221ff.

150
Protokoll Nr. 5 der Geschäftsausschuß-Sitzung vom 11.6.1946 (UVW, Z 69, Nr. 159); Aktennotiz über die Sitzung vom 9.7.1946 (UVW, Z 69, Nr. 157).

151
Richter, Währungs- und Wirtschaftsreform, p. 225.

152
Ibid., p. 230.

153
Werner an Striebig vom 14.10.1947 (UVW, Z 69, Nr. 203); Steinmeier an Hirst vom 17.2.1947 (ibid.).

154
Richter, Währungs- und Wirtschaftsreform, pp. 222ff.; see also Manfred Grieger: Zuwanderung und junge Industriestadt. Wolfsburg und die Migranten seit 1938, in: Niedersächsisches Jahrbuch für Landesgeschichte, 81 (2009), pp. 177-210, here pp. 187f.

155
Richter, Währungs- und Wirtschaftsreform, p. 225; idem, Hirst, pp. 57 and 81.

156
Richter, Währungs- und Wirtschaftsreform, p. 226; Wolfgang Jacobmeyer: Vom Zwangsarbeiter zum Heimatlosen Ausländer. Die displaced persons in Westdeutschland 1945-1951, Göttingen 1985, S. 159ff.; on the situation of the DPs, see also Bernhild Vögel: Entwurzelt. Displaced persons im Salzgittergebiet, Salzgitter 1994, as well as Andreas Lembeck: Befreit, aber nicht in Freiheit. Displaced persons im Emsland 1945-1950, Bremen 1997.

157
Aktennotiz über die Besprechung vom 9.8.1946 (UVW, Z 69, Nr. 157).

158
Protokoll der 5. Geschäftsausschuß-Sitzung vom 11.6.1946 (UVW, Z 69, Nr. 159); Aktennotiz über die Sitzung am 9.7.1946 (UVW, Z 69, Nr. 157).

159
Ibid.; Aktennotiz über die Besprechung vom 9.8.1946 (idem.).

160
Richter, Hirst, p. 68.

161
Denkschrift Münchs vom 12.12.1947 (UVW, Z 61, Nr. 4.001).

162
Sozialbericht zum Bericht des Haupttreuhänders per 30.6.1947, p. 1 (UVW, Z 69, Nr. 198).

163
Personalleitung an F. T. Neal betr. Gemeinschaftslager G und P vom 22.8.1947 (UVW, Z 69, Nr. 111/1).

164
Höhne an Münch betr. Bericht über die Bewährung der Jugoslawen vom 3.10.1947 (UVW, Z 69, Nr. 112/1).

165
Turner, Volkswagenwerk, pp. 290f.; Mommsen, Stunde, p. 134.

166
Richter, Währungs- und Wirtschaftsreform, pp. 227f.

167
Notiz Münchs vom 24.3.1947 (UVW, Z 69, Nr. 232).

168
Protokoll über die Besprechung zwischen der Werkleitung und der Betriebsvertretung am 1. Oktober 1946 (UVW, Z 61, Nr. 4001).

169
Richter, Währungs- und Wirtschaftsreform, pp. 230ff.

170
Bericht von Striebig betr. Zusammensetzung der Belegschaft des Volkswagenwerks vom 13.6.1947 (UVW, Z 69, Nr. 195).

171
Denkschrift von Hermann Münch vom 12.12.1947 (UVW, Z 61, Nr. 4.001).

172
Nordhoff an Steinmeier betr. Einstellung von Frauen vom 24.1.1949 (UVW, Z 174, Nr. 2034/1).

173
Richter, Währungs- und Wirtschaftsreform, pp. 232ff.

174
Ibid., p. 234.

175
Turner, Volkswagenwerk, pp. 293f.

176
Nordhoff an das Niedersächsische Ministerium für Arbeit und Aufbau vom 11.4.1949 (UVW, Z 69, Nr. 729); Goransch an Nordhoff vom 18.5.1949 (ibid.); Besprechungsniederschrift betr. Bauabschnitt XI vom 19.8.1949 (UVW, Z 63, Nr. 202). On early apartment construction in Wolfsburg, see Simone Neteler, "Die Stadtmaschine springt an." Wolfsburg nimmt sich selbst in die Hand, in Stölzl, Wolfsburg-Saga, pp. 106-113.

177
Riechert, Neubeginn, pp. 221f.

178
Ibid., p. 183; Mommsen/Grieger, Volkswagenwerk, p. 960.

179
Riechert, Neubeginn, p. 181.

180
Ibid.; Benz, Potsdam, p. 172. In this context, Benz remarks that the Antifa Movement was forbidden in the Soviet and U.S. zones in the early summer of 1945. On Kiesel's dismissal, see also the interview with Ivan Hirst from 21.-23.10.1997, p. 91 (UVW, Z 300, Nr. 33).

181
Resolution of the Works Council in its session on August 22nd, 1945 (UVW, Z 69, Nr. 130/7).

182
Turner, Occupation, p. 386.

183
On the image of Germany among the British, see Lothar Kettenacker: Preußen-Deutschland als britisches Feindbild im Zweiten Weltkrieg, in: Bernd Jürgen Wendt (ed.): Das britische Deutschlandbild im Wandel des 19. und 20. Jahrhunderts, Bochum 1984, pp. 145ff.

184
Interview mit Ivan Hirst vom 21.-23.10.1997, pp. 55ff. (UVW, Z 300, Nr. 33).

185
Ibid., p. 44; Richter, Hirst, pp. 43ff.

186
Schnakenberg emphasizes that the British democratization policy was not limited to guidelines, prohibitions, and checks but rather was based much more on positive, future-oriented measures and focused on cooperation from the beginning: Schnakenberg, Democracy-building, pp. 46ff.

187
Riechert, Neubeginn, p. 223.

188
Richter, Hirst, p. 45.

189
Mommsen/Grieger, Volkswagenwerk, p. 960; Riechert, Neubeginn, pp. 224f.

190
Protokoll der 7. Sitzung der Betriebsvertretung vom 29.1.1946, pp. 2f. (UVW, Z 119, Nr. 9/1); Protokoll der 13. Sitzung der Betriebsvertretung vom 26.3.1946, S. 3 (ibid.).

191
Protokoll der 19. Sitzung der Betriebsvertretung vom 21. Mai 1946, pp. 4f. (UVW, Z 119, Nr. 9/2); Protokoll der 26. Sitzung der Betriebsvertretung vom 9.7.1946, p. 2 (ibid.).

192
Protokoll der 29. Sitzung der Betriebsvertretung vom 31.7.1946, pp. 1f. (ibid.); Aktennotiz Münchs vom 5.7.1946 (UVW, Z 61, Nr. 4.001).

193
Protokoll der 29. Sitzung der Betriebsvertretung vom 31.7.1946, pp. 1f. (ibid.); Aktennotiz Münchs vom 5.7.1946 (UVW, Z 61, Nr. 4.001).

194
Riechert, Neubeginn, p. 235.

195
Protokoll über die von Münch einberufene Sitzung bezüglich Arbeitszeitverlängerung vom 22.7.1946 (UVW, Z 69, Nr. 204); Aktennotiz Münchs vom 5.7.1946 (UVW, Z 61, Nr. 4.001).

196
Riechert, Neubeginn, p. 234.

197
Protokoll der 1. Betriebsratssitzung vom 16.12.1946 (UVW, Z 119, Nr. 11/1); Protokoll der 2. Betriebsratssitzung vom 18.12.1946 (ibid.); Protokoll der 3. Betriebsratssitzung vom 20.12.1946 (ibid.).

198
Riechert, Neubeginn, pp. 196f.

199
Qtd. in Günther Koch: Stabilität und Wandel der Belegschaftsvertretung im Volkswagenwerk Wolfsburg, Göttingen 1985, p. 66.

200
Notiz über die Rücksprache des Betriebsrats bei Herrn Nordhoff am 12.1.1950 (UVW, Z 161, Nr. 402).

201
Betriebsmitteilung betr. Nazi-Propaganda vom Juli 1947 (UVW, Z 69, Nr. 216/2); on this, see also Riechert, Neubeginn, p. 196.

202
Ibid., pp. 223f. and 241.

203
Personalabteilung an Münch betr. Schwerarbeiter-Zulage vom 18.3.1946 (UVW, Z 69, Nr. 139); Schreiben des Haupttreuhänders an das Landesernährungsamt der Provinz Hannover vom 18.3.1946 (ibid.).

204
Protokoll der Betriebsversammlung vom 15.11.1946, p. 1 (UVW, Z 119, Nr. 11).

205
Riechert, Neubeginn, pp. 240f.

206
Bericht Nr. 33 vom 5.1.1948 betr. die Untersuchung von 773 Arbeitern des Volkswagenwerks (UVW, Z 119, Nr. 11).

207
Protokoll der 2. Betriebsvollversammlung des VWW am 28.11.1947, p. 1 (ibid.); cf. Riechert, Neubeginn, p. 240.

208
Protokoll der 37. Sitzung der Betriebsvertretung am 25.9.1946, pp. 2f. (UVW, Z 119, Nr. 9/1).

209
Niederschrift über die am 23.10.1947 mit Vertretern des Arbeitsministeriums, Hannover, im Werk stattgefundenen Besprechung vom 30.10.1947. (UVW, Z 69, Nr. 112/1).

210
Protokoll der 28. Sitzung der Betriebsvertretung am 24.7.1946, pp. 1f. (UVW, Z 119, Nr. 9/1).

211
Protokoll über die Sitzung bei Münch am 14.8.1946 (UVW, Z 61, Nr. 4001).

212
Aktennotiz über Besprechung am 16.6.1947 (ibid.).

213
Protokoll der 27. Sitzung der Betriebsvertretung vom 16.7.1946, p. 2 (UVW, Z 119, Nr. 9/1).

214
Protokoll über die Besprechung zwischen der Werkleitung und der Betriebsvertretung am 1. Oktober 1946 (UVW, Z 61, Nr. 4001).

215
Koop, Besetzt, pp. 185ff.

216
Turner, Occupation, pp. 395f.; Mommsen/Grieger, Volkswagenwerk, p. 960.

217
Riechert, Neubeginn, p. 239; Christoph Kleßmann/Peter Friedemann: Streiks und Hungermärsche im Ruhrgebiet 1946-1948, Frankfurt am Main; New York 1977, pp. 24f.

218
Aktennotiz Münchs betr. Anruf des Herrn Hesse vom 17.12.1947 (UVW, Z 69, Nr. 232); Münch an F. T. Neal vom 9.5.1947 (ibid.).

219
Münch an Hirst vom 17.12.1947 (UVW, Z 69, Nr. 222).

220
Riechert, Neubeginn, pp. 235f.

221
Mommsen/Grieger, Volkswagenwerk, pp. 960f.; the "10 Grundsätze" are reproduced in Turner, Occupation, p. 397.

222
Protokoll über die Besprechung betr. Unterzeichnung der Betriebsvereinbarung vom 10.5.1947 (UVW, Z 69, Nr. 232).

223
Niederschrift über die Besprechung betr. Einsetzung eines Arbeitsdirektors vom 18.12.1947 (UVW, Z 119, Nr. 11); Interview mit Ivan Hirst vom 21.-23.10.1997, p. 82 (UVW, Z 300, Nr. 33).

224
Turner, Occupation, p. 403.

225
Protokoll der Betriebsversammlung vom 1.10.1949, p. 2 (UVW, Z 119, Nr. 5).

226
Jahresbericht 1948 der Volkswagenwerk GmbH, p. 126 (UVW, Z 174, Nr. 456).

227
Richter, Währungs- und Wirtschaftsreform, p. 234; Minutes of the Twenty-Eighth Board of Control Meeting of 26.10.1948 (PRO, FO 1036, Nr. 457); Protokoll der Betriebsversammlung vom 9.3.1949, p. 1 (UVW, Z 119, Nr. 5).

228
Riechert, Neubeginn, pp. 199ff.; Tolliday, Enterprise, pp. 316ff.

229
Riechert, Neubeginn, pp. 229f.; Grieger, Zuwanderung, p. 188.

230
Richard Stöss: Rechtsextremismus im Wandel, Bonn 2005, p. 78; Armin Pfahl-Traughber: Rechtsextremismus in der Bundesrepublik, München 2001, pp. 22f.

231
Riechert, Neubeginn, pp. 172f.

232
Ibid., pp. 242f.; on newspaper reports concerning the fall of Otto Peter, see Koch, Stabilität, pp. 72ff.

233
Mommsen/Grieger, Volkswagenwerk, p. 974.

234
Notiz betr. Besprechung mit dem Betriebsrat in verschiedenen Angelegenheiten (UVW, Z 174, Nr. 402).

235
Thomas Haipeter: Mitbestimmung bei VW. Neue Chancen für die betriebliche Interessenvertretung?, Münster 2000, pp. 146ff.

236
Fertigungsprogramm vom 3.2.1946 (UVW, Z 69, Nr. 130/1); a list of monthly production rates at the VW plant from December 1945-1949 can be found in Turner, Volkswagenwerk, p. 299. All other figures concerning monthly production rates came from this source.

237
Ergänzung zu Punkt 6 des Protokolls Nr. 3 der Geschäftsausschuss-Sitzung vom 13.5.1946 (UVW, Z 69, Nr. 159).

238
Besprechung über eine Produktion von 2.500 Wagen pro Monat vom 21.6.1946 (UVW, Z 69, Nr. 150).

239
Paulsen an Münch vom 26.7.1946 (UVW, Z 69, Nr. 157).

240
Kemmler an Hirst und McInnes vom 9.8.1946 (UVW, Z 69, Nr. 150).

241
Ibid.

242
See Turner, Occupation, p. 272; Reichert, Entnazifizierung, p. 34; Geschäftsübersicht zum Bericht des Haupttreuhänders per 1946 vom 7.3.1947, p. 7 (UVW, Z 69, Nr. 198).

243
Hirst an Münch vom 20.6.1946 (UVW, Z 69, Nr. 152); Military Government - Germany, Property Control (No. 9.901): Letter of Appointment of Custodian vom 17. Juni 1946 (UVW, Z 261, Nr. 1).

244
Lesczuk an Brörmann betr. Auswirkung der Entnazifizierung vom 25.6.1946 (UVW, Z 69, Nr. 152); Besprechung über die Produktion von 2.500 Wagen vom 21.6.1946 (UVW, Z 69, Nr. 150).

245
Huland an Hirst o.D. [21.6.1946] (UVW, Z 69, Nr. 152); on key workers continuing their jobs, see the confidential letter Hirst sent to the Chief Custodian Dr. Münch of 20.6.1946 (UVW, Z 69, Nr. 152); Aktennotiz über die Sitzung bei Münch am 9.7.1946 (UVW, Z 69, Nr. 157).

246
Brörmann an Hirst vom 24.6.1946 (UVW, Z 69, Nr. 152).

247
Münch an Hirst o.D. [Juni 1946] (ibid.).

248
Turner, Occupation, pp. 288f.

249
Paulsen an Hirst betr. Situationsbericht in der Zubringerindustrie vom 7.11.1946 (UVW, Z 69, Nr. 150).

250
Turner, Occupation, p. 204.

251
Abelshauser, Wirtschaftsgeschichte, p. 110.

252
Minutes of the Eleventh Board of Control Meeting of 6.12.1946, p. 4 (UVW, Z 69, Nr. 150); Besprechung am 6.1.1947 (UVW, Z 69, Nr. 232); Geschäftsübersicht zum Bericht des Haupttreuhänders über das erste Halbjahr 1947, p. 1 (UVW, Z 69, Nr. 198).
(UVW, Z 69, Nr. 198).

253
Aktenvermerk Striebigs betr. Sitzung bei Major Hirst vom 1.8.1947 (UVW, Z 174, Nr. 1237/1).

254
On the revision of the plan for the level of industry, see Turner, Occupation, pp. 494ff.

255
Sitzung bei Hirst am 23.7.1947 (UVW, Z 69, Nr. 232).

256
Kleßmann, Staatsgründung, pp. 177f.

257
Aktenvermerk über eine Besprechung bei Major Hirst am 8.4.1947 (UVW, Z 69, Nr. 232).

258
F. T. Neal an Generaldirektor Münch vom 24.4.1947 (UVW, Z 69, Nr. 201); Aktennotiz Münchs vom 1.5.1947 (UVW, Z 69, Nr. 232).

259
Kemmler an Münch betr. Materiallage und Programmgestaltung vom 6.8.1947 (UVW, Z 69, Nr. 204).

260
Aktenvermerk betr. Sitzung mit Herrn Wenk vom 6.5.1947 (UVW, Z 69, Nr. 232).

261
Aktennotiz der Besprechung betr. Programmgestaltung vom 3.6.1947 (ibid.).

262
Aktennotiz über die Besprechung am 14.6.1947 (UVW, Z 69, Nr. 204).

263
Kemmler an Münch betr. Materiallage und Programmgestaltung vom 6.8.1947 (UVW, Z 69, Nr. 204); Aktennotiz Paulsens an Hirst vom 31.7.1946 (UVW, Z 69, Nr. 150).

264
Aktenvermerk Striebigs betr. Sitzung bei Major Hirst vom 24.7.1947 (UVW, Z 69, Nr. 232).

265
Aktenvermerk Striebigs betr. Bau von Second-Hand-Wagen vom 9.8.1947 (ibid.); Aktenvermerk Striebigs betr. Sitzung bei Major Hirst am 11.8.1947 (ibid.)

266
Aktenvermerk Striebigs betr. Sitzung bei Major Hirst am vom 1.8.1947 (ibid.).

267
Ibid.

268
Kemmler an Münch betr. Materiallage und Programmgestaltung vom 6.8.1947 (UVW, Z 69, Nr. 204).

269
Aktenvermerk Striebigs betr. Sitzung bei Major Hirst am 6.9.1947 (ibid.).

270
Wenk an Münch vom 23.8.1947 (ibid.); Münch an Hirst betr. Festsetzung des Wagenpreises vom 15.11.1947 (UVW, Z 69, Nr. 112/1).

271
Münch an Steinmeier betr. Produktionserhöhung vom 30.9.1947 (UVW, Z 69, Nr. 222); Anweisung von Hirst an Münch vom 3.10.1947 (ibid.).

272
Aktennotiz über die Besprechung am 16.6.1947 (UVW, Z 69, Nr. 204).

273
Schreiben an Münch vom 23.8.1947 (ibid.); Münch an Neal betr. Festsetzung des Wagenpreises vom 15.11.1947 (UVW, Z 69, Nr. 112/1).

274
Hiemenz an Münch betr. Wagenpreis vom 1.12.1947 (UVW, Z 69, Nr. 112/1).

275
Ibid.

276
Hirst an General Manager betr. Sale of second hand and other substandard cars vom 1.12.1947 (UVW, Z 69, Nr. 216/1).

277
Jahresbericht Verkauf und Kundendienst 1948, Anhang: Tabelle 4 (UVW, Z 174, Nr. 1033).

278
Hirst an Abteilungsleiter vom 4.10.1945 (UVW, Z 69, Nr. 130/3).

279
Bericht über die Kundendienst-Werkschule vom 4.1.1946 (ibid.); Interne Mitteilung Feuereissen an Schmücker vom 17.10.1945 (ibid.).

280
Bericht der Jeep-Reparatur-Werkstatt für das Geschäftsjahr 1946 (UVW, Z 69, Nr. 198).

281
Interview mit Ivan Hirst von 21.-23.10.1997, pp. 11 and 36 (UVW, Z 300, Nr. 33).

282
Aktennotiz Münchs vom 30.6.1946 (UVW, Z 69, Nr. 198).

283
Linne, Sonnentage, pp. 11f.

284
Feuereissen betr. Vorschlag für eine Kundendienst-Außenorganisation [probably July 1946] (UVW, Z 69, Nr. 217).

285
Linne, Sonnentage, p. 9. Daimler-Benz maintained a branch network run by the parent company; the auto union based its sales policy on independent mid-sized dealerships.

286
Bericht der Verkaufs- und Kundendienstorganisation für das Geschäftsjahr 1946, pp. 1f. and attachment (UVW, Z 69, Nr. 198).

287
Feuereissen an Kemmler vom 18.12.1946 (UVW, Z 174, Nr. 1031).

288
Frank an Schultz betr. Inspektion ihrer Werkstatt vom 5.5.1947 (UVW, Z 120, Nr.4/1); Inspektionsbericht vom 27.5.1947 (ibid.)

289
Bericht von Bernhard Neugebauer über den Besuch des Hauptverteilerbezirkes Hülpert & Müller in der Zeit vom 23.-26.9.1947 vom 29.9.1947 (UVW, Z 174, Nr. 1031).

290
Tätigkeitsbericht der Abteilung Verkauf für das Jahr 1946, p. 3 (UVW, Z 69, Nr. 198); Bericht der Verkaufs- und Kundendienstorganisation für das Geschäftsjahr 1946, p. 6 (ibid.); Bericht über die Tätigkeit der Technischen Leitung 1947, p. 2 (UVW, Z 69, Nr. 196/1).

291
Bericht der Verkaufs- und Kundendienstorganisation für das Geschäftsjahr 1946, pp. 4f. (UVW, Z 69, Nr. 198); Beitrag der Abteilung Verkauf und Kundendienst zum Treuhandbericht lt. Schreiben vom 5.7.1947, p. 2 (ibid.).

292
Bericht der Verkaufs- und Kundendienstorganisation für das Geschäftsjahr 1946, p. 4 (UVW, Z 174, Nr. 1033/1); Beitrag der Abteilung Verkauf und Kundendienst zum Treuhandbericht lt. Schreiben vom 5.7.1947, S. 2 (UVW, Z 69, Nr. 198); Bericht des Treuhänders zum 31.12.1947 (UVW, Z 69, Nr. 196); the figures for Schulz were taken from the „Gespräch mit Major Hirst am 26./27.4.1971" (UVW, Z 69, Nr. 167).

293
Münch an Steinmeier vom 26.2.1947 (UVW, Z 69, Nr. 196); Hirst an Feuereissen vom 5.12.1947 (UVW, Z 69, Nr. 222).

294
Direktionsbesprechung am 12.6.1947 (UVW, Z 69, Nr. 232).

295
Interne Mitteilung von Feuereissen an Münch vom 15.10.1947 (UVW, 69, Nr. 883/1); Geschäftsübersicht zum Bericht des Haupttreuhänders über das 1. Halbjahr 1947, p. 7 (UVW, Z 69, Nr. 198).

296
Feuereissen an Kemmler vom 18.12.1946 (UVW, 174, Nr. 1031); Bericht der Verkaufs- und Kundendienstorganisation für das Geschäftsjahr 1946, p. 2 (UVW, Z 174, Nr. 1033/1).

297
Münch an Hirst vom 21.10.1946 (UVW, Z 69, Nr. 150)

298
Aktennotiz über die Besprechung bei der Daimler-Benz AG am 18.5.1947 (UVW, Z 69, Nr. 204).

299
Hirst an Directeur du Service du Material des Troupes d'Occupation vom 12.1.1948 (UVW, Z 69, Nr. 201); Commandement en Chef Francais en Allemagne an Control Commission for Germany, Wolfsburg Motor Works vom 19.2.1948 (ibid.).

300
Jahresbericht Verkauf und Kundendienst 1948, pp. 1of. (UVW, Z 174, Nr. 1033).

301
Ibid.

302
Ansprache Nordhoffs auf der Großhändlertagung am 20.1.1949 (UVW, Z 69 Nr. 883).

303
Rundschreiben an alle VW-Vertretungen und -Werkstätten von Feuereissen und Südekum vom 18.1.1949 (UVW, Z 69, Nr. 883/2).

304
Jahresbericht Verkauf und Kundendienst 1949, pp. 1f. and 7 (UVW, Z 174, Nr. 1033).

305
Qtd. in Tolliday, Volkswagen, p. 291.

306
Münkler, Mythen, p. 465.

307
Bryce an Hirst vom 27.5.1946 (UVW, Z 69, Nr. 215)

308
Interview mit Ivan Hirst vom 21.-23.10.1997, pp. 35f. and 56 (UVW, Z 300, Nr. 33); Hirst an Brörmann vom 22.1.1946 (UVW, Z 69, Nr. 130/1).

309
Richter, Hirst, p. 66.

310
Kundendienstbrief Nr. 13/4 (UVW, Z 69, Nr. 217); Bericht des Haupttreuhänders zum 31.12.1947 (UVW, Z 69, Nr. 196).

311
Bryce an Brörmann von 21.5.1946 (UVW, Z 69, Nr. 215).

312
Befundbericht über angelieferte Neufahrzeuge vom 5.12.1946 (UVW, Z 69, Nr. 149); Martens an Münch vom 4.2.1947 (ibid.).

313
Lageberichte für den Monat Juni 1947 (ibid.); Inspektion an Münch vom 8.10.1947 (UVW, Z 69, Nr. 196).

314
Aktennotiz Pachalys vom 30.1.1948 (UVW, Z 591, Nr. 2).

315
Lageberichte der Verkaufsabteilung für die Monate März und Mai 1947 (UVW, Z 69, Nr. 149); Besprechung über eine Produktion von 2.500 Wagen pro Monat (UVW, Z 69, Nr. 150).

316
Kales an Münch vom 30.12.1946 (UVW, Z 69, Nr. 196).

317
Arthur Railton discusses Berryman's experiment: „Der Käfer". Der ungewöhnliche Weg eines ungewöhnlichen Automobils, Zürich 1985, pp. 99f.

318
On the steering problems, see the questions to Ivan Hirst of January/February 1996 (StadtA WOB, HA) as well as the Bericht des Haupttreuhänders zum 31.12.1947, pp. 9f. (UVW, Z 69, Nr. 196).

319
Lageberichte der Verkaufsabteilung für die Monate Januar bis Juni 1947 (UVW, Z 69, Nr. 149).

320
Auflistung betr. Verbesserungen in der Qualität des Fahrzeugs vom 30.5.1947 (UVW, Z 69, Nr. 111/1).

321
Lagebericht der Verkaufsabteilung für den Monat Juli 1947 (ibid.).

322
Aktenvermerk betr. Sitzung bei Major Hirst am 23.7.1947 (UVW, Z 69, Nr. 232)

323
Münch an Hirst und Neal vom 18.7.1947 (UVW, Z 69, Nr. 216/2).

324
Paulsen an Münch und Kemmler vom 25.7.1947 (UVW, Z 69, Nr. 111).

325
Höhne an Hirst vom 13.10.1947 (UVW, Z 69, Nr. 203).

326
Orlich an Münch vom 13.10.1947 (ibid.).

327
Ibid.

328
Hirst an Generaldirektor Münch vom 4.10.1947 (UVW, Z 69, Nr. 196).

329
Inspektion an Münch vom 28.10.1947 (ibid.); Aktennotiz betr. Tellerrad vom 20.10.1947 (ibid.).

330
Münch an Steinmeier vom 28.10.1947 (UVW, Z 69, Nr. 196); Aktenvermerk über Sitzung bei Major Hirst am 11.8.1947 (UVW, Z 69, Nr. 232); Interview mit Ivan Hirst vom 21.-23.10.1997, p. 28 (UVW, Z 300, Nr. 33)

331
Aktennotiz Martens vom 29.10.1947 (UVW, Z 69, Nr. 112/2).

332
Bericht des Haupttreuhänders zum 31.12.1947, pp. 7ff. (UVW, Z 69, Nr. 196).

333
Kales an Münch betr. Einbau einer Flüssigkeitsbremse vom 2.10.1947 (ibid.).

334
Interview mit Ivan Hirst vom 21.-23.10.1997, p. 30 (UVW, Z 300, Nr. 33).

335
Schnakenberg, Democracy-building, pp. 32ff.

336
Ergänzung zu Punkt 6 des 3. Protokolls der Geschäftsausschuß-Sitzung vom 13.5.1946 (UVW, Z 69, Nr. 159).

337
Turner, Occupation, pp. 488ff.

338
Tolliday, Enterprise, pp. 293f.; Turner, Volkswagenwerk, p. 292

339
Turner, Occupation, pp. 491f.

340
Tolliday, Enterprise, pp. 295f.; Schnakenberg, Democracy-building, p. 34.

341
Aktenvermerk Striebigs vom 24.3.1947 betr. Unterrichtung durch Major Hirst am 22.3.1947 (UVW, Z 69, Nr. 232).

342
Harle an JEIA vom 9.5.1947 (PRO, FO 1039, Nr. 796).

343
Harle an Chief, Industry Division, Berlin vom 15.5.1947 (PRO, FO 1039, Nr. 193).

344
Turner, Occupation, pp. 498f.

345
Kemmler an Hirst vom 17.7.1947 (UVW, Z 69, Nr. 150).

346
On the collapse of the Electrobel deal, see the questions to Ivan Hirst from January/February 1996, p. 16 (StadtA WOB, HA).

347
Sitzung bei Major Hirst am 23.7.1947 (UVW, Z 69, Nr. 232).

348
Koop, Besetzt, p. 167.

349
Generalimporteursvertrag mit Pon's Automobielhandel vom 8.8.1947 (UVW, Z 174, Nr. 873/2).

350
Railton, Käfer, pp. 108f.

351
Direktionsbesprechung am 23.6.1947 (UVW, Z 69, Nr. 232).

352
Feuereissen an Technische Leitung betr. Produktion von Volkswagen für Export am 1.10.1947 (UVW, Z 69, Nr. 112/2/1).

353
Railton, Käfer, p. 108.

354
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 16 (StadtA WOB, HA). Cf. Richter, Hirst, p. 86.

355
Aktenvermerk betr. Sitzung bei Major Hirst am 6.9.1947 (UVW, Z 69, Nr. 232).

356
Report to Board of Control on Investigations in Belgium and Holland to Appoint VW Concessionaires from 30.10.-3.11.1947 (PRO, FO 1046, Nr. 193).

357
Kock an Steinmeier betr. Standard-Exportwagen für Belgien vom 20.10.1947 (UVW, Z 69, Nr. 112/2)

358
Martens an Steinmeier betr. Volkswagen für Export vom 30.10.1947 (UVW, Z 69, Nr. 112/2/1); Höhne an Martens vom 1.11.1947 (ibid.).

359
Aktennotiz Münchs betr. Stahlzuteilung vom 17.12.1947 (UVW, Z 69, Nr. 232).

360
Hirst an Münch vom 11.12.1947 (UVW, Z 69, Nr. 203).

361
Jahresbericht der Volkswagenwerk GmbH 1948, p. 14 (UVW, Z 174, Nr. 456); Geschäftsübersicht für das 1. Halbjahr 1947, p. 4 (UVW, Z 69, Nr. 198); Turner, Volkswagenwerk, p. 296, gives the figure of 1,963 Volkswagens exported in 1947. On the foreign currency proceeds the Volkswagen factory gained from July to October 1947, which amounted to about $324,000, see Hiemenz an Münch betr. Export-Devisenbonus vom 5.11.1947 (UVW, Z 69, Nr. 112/1).

362
Schwarzer, Außenhandelskontor, an Nordhoff vom 23.2.1948 (UVW, Z 263, Nr. 387/1).

363
Nordhoff an Wilson, JEIA, vom 12.2.1948 (ibid.); Nordhoff an Brandts, VfW, vom 23.2.1948 (ibid.).

364
Telegramm Brandts, VfW, an Nordhoff vom 18.2.1948 (ibid.); Telegramm ans VWW vom 28.2.1948 (ibid.).

365
Schwarzer, Außenhandelskontor, an Nordhoff vom 23.2.1948 (ibid.).

366
Interne Mitteilung Kock an Steinmeier vom 29.4.1948 (UVW, Z 263, Nr. 387/2).

367
Seliger, VfW, an Nordhoff vom 23.2.1948 (UVW, Z 263, Nr. 387/1); Nordhoff an die JEIA Hannover vom 2.3.1948 (ibid.); Kock an Nordhoff vom 10.3.1948 (ibid.).

368
Nordhoff an die JEIA Frankfurt vom 27.4.1948 (ibid.).

369
E.V. Dadly, Bipartite Control Office, an die Verwaltung für Wirtschaft vom 20.4.1948 (ibid.).

370
Maltzan an Nordhoff vom 20.5.1948 (ibid.).

371
Nordhoff an Radclyffe vom 26.5.1948 (ibid.).

372
Nordhoff an Brandts, VfW, vom 3.6.1948 (ibid.); Kock an Nordhoff vom 5.7.1948 (ibid.); Telegramm der JEIA an Nordhoff vom 25.6.1948 (ibid.); Generalimporteursvertrag mit der A/S Skandinavisk Motor Co. vom 1.7.1948 und der A/B Scania Vabis vom 8. 7.1948 (UVW, Z 174, Nr. 873/2).

373
J.M. Bradley, BICO, an Mr. Wilson, JEIA, vom 21.6.1948 (UVW, Z 263, Nr. 387/1).

374
Jahresbericht der Volkswagenwerk GmbH 1948, p. 14 (UVW, Z 174, Nr. 456).

375
F. T. Neal an Hermann Knott vom 27.10.1948 (UVW, Z 69, Nr. 202/1).

376
Hirst an Nordhoff vom 29.7.1948 (UVW, Z 69, Nr. 201).

377
Neal an Knott vom 27.10.1948 (UVW, Z 69, Nr. 202/1).

378
Qtd. in Turner, Volkswagenwerk, p. 296.

379
Rede von Heinrich Nordhoff auf der Pressekonferenz am 4.1.1949 (UVW, Z 69, Nr. 883/1).

380
Jahresbericht der Volkswagenwerk GmbH 1949, p. 2 (UVW, Z 174, Nr. 457).

381
Protokoll zur Tagung der Generalvertreter und Grosshändler am 20.1.1949 in Wolfsburg, pp. 2ff. (UVW, Z 69, Nr. 883/1).

382
Radclyffe an Orr-Ewing vom 13.10.1947 (PRO, FO 1039, Nr. 797).

383
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 10 (StadtA WOB, HA); Mommsen/Grieger, Volkswagenwerk, pp. 973f.

384
Edelmann, Nordhoff, pp. 9ff. and 57ff.

385
Edelmann, Nordhoff, p. 75; Radclyffe an Nordhoff vom 7.11.1947 (UVW, Z 69, Nr. 207/2).

386
Münch an Radclyffe o.D. (ibid.).

387
Münch an Nordhoff vom 29.11.1947 (ibid.); Hirst an Münch vom 26.11.1947 (ibid.)

388
Rede Nordhoffs anlässlich der Einsetzung des Beirats am 30.5.1951 (UVW, Z 69, Nr. 185).

389
Edelmann, Nordhoff, pp. 8of.; Mommsen/Grieger, Volkswagenwerk, pp. 973f.

390
Radclyffe an Orr-Ewing vom 13.10.1947 (PRO, FO 1039, Nr. 797).

391
Hunecke an Nordhoff betr. Fehler in der Organisation vom 25.2.1948 (UVW, Z 174, Nr. 1234/1).

392
In the course of the organizational reform in April 1948, the experimental facility, which had been subordinated to the production manager up until then, was integrated into the newly established Technical Development Department. In this context, Steinmeier complained that Nordhoff had not informed him of this measure beforehand. Steinmeier an Nordhoff vom 8.4.1948 (UVW, Z 174, Nr. 1234/1).

393
Richter, Hirst, p. 90.

394
Haesner an Sekretariat General-Direktion betr. Jahresabschluss 1948 vom 12.1.1949 (UVW, Z 373, Nr. 604/2).

395
Aktennotiz von Sagebiel betr. Kontingentierung der Fahrzeugproduktion vom 8.3.1948 (UVW, Z 69, Nr. 139).

396
Minutes of the Twenty-Third Board of Control Meeting of 16.4.1948 (UVW, Z 69, Nr. 201); Minutes of the Twenty-Fourth Board of Control Meeting vom 14.5.1948 (ibid.); Produktionsbesprechungen vom 18.2. und 12.5.1948 (UVW, Z 61, Nr. 7.039).

397
Nordhoff an Wenk vom 17.6.1948 (UVW, Z 69, Nr. 139); Wenk an Nordhoff vom 21.6.1948 (ibid.)

398
Tolliday, Volkswagen, pp. 303ff.; Edelmann, Nordhoff, pp. 88f. and 98.

399
Linne, Sonnenschein, pp. 11 and 19ff.; Christian Kleinschmidt: Von der „Volksgemeinschaft" zur „Gemeinschaft der Volkswagenfahrer". Konsumgesellschaftliche Aspekte, die USA und der Wiederaufstieg von Volkswagen nach dem Zweiten Weltkrieg, Akkumulation, Nr. 12 (1998), pp. 18-24, here p. 20.

400
Abelshauser, Wirtschaftsgeschichte, p. 127.

401
Münkler, Mythen, p. 458.

402
Fragen an Ivan Hirst vom Januar/Februar 1996, p. 6 (StadtA WOB, HA).

403
Turner, Volkswagenwerk, p. 293.

404
Abelshauser, Wirtschaftsgeschichte, p. 127.

405
Christoph Buchheim: Einführung in die Wirtschaftsgeschichte, München 1997, p. 102; idem: Die Errichtung der Bank deutscher Länder und die Währungsreform in Westdeutschland, in: Deutsche Bundesbank (ed.): 50 Jahre Deutsche Mark. Notenbank und Währung in Deutschland seit 1948, München 1998, pp. 91-138.

406
Turner, Volkswagenwerk, p. 297.

407
Turner, Occupation, pp. 591f.

408
Nordhoff an VfW vom 23.9.1948 (UVW, Z 69, Nr. 139); VfW an Volkswagenwerk vom 24.8.1948 (ibid).

409
Jahresbericht der Volkswagenwerk GmbH vom 21.6. bis 31.12.1948, p. 2 (UVW, Z 174, Nr. 456).

410
Entwurf der Rede Nordhoffs zu produktiven Arbeitskräften am 25.5.1948, pp. 1ff. (UVW, Z 174, Nr. 1234/1).

411
Ibid.

412
Jahresbericht der Hauptabteilung Technische Entwicklung für 1949, p. 7 (UVW, Z 373, Nr. 604/2).

413
Nordhoff an Haesner am 12.4.1948 (UVW, Z 174, Nr. 1816/3).

414
Nordhoff an Haesner betr. Sitze vom 19.3.1949 (UVW, Z 174, Nr. 1816/2).

415
Haesner an Nordhoff betr. Verglasung vom 17.2.1949 (UVW, Z 174, Nr. 1816/2).

416
Nordhoff an Steinmeier betr. Presswerk am 23.12.1948 (UVW, Z 174, Nr. 1234/1).

417
Nordhoff an Steinmeier betr. Produktionsplanung am 15.12.1948 (ibid.).

418
Nordhoff an Haesner vom 19.4.1949 (UVW, Z 174, Nr. 1816/1).

419
Nordhoff an Haesner betr. Bremsen vom 19.7.1949 (ibid.).

420
Haesner an Nordhoff betr. Öldruckbremse vom 19.9.1949 (ibid.).

421
Bernd Wiersch: Der VW Bulli. Die Transporter-Legende für Leute und Lasten, Bielefeld 2009, pp. 23f.

422
Haesner an Goransch betr. Personalbedarf des Konstruktionsbüros vom 11.11.1948 (UVW, Z 174, Nr. 1816).

423
Haesner an Nordhoff betr. Karosserie-Konstruktion vom 19.8.1949 (UVW, Z 174, Nr. 1816/1); on Haesner's career history, see Wiersch, Bulli, p. 25.

424
Ibid., pp. 27ff.; Jahresbericht der Hauptabteilung Technische Entwicklung für 1949, p. 1 (UVW, Z 373, Nr. 604/2).

425
Haesner an Nordhoff betr. Karosserie-Konstruktion vom 19.8.1949 (UVW, Z 174, Nr. 1816/1).

426
Wiersch, Bulli, p. 30.

427
Haesner an Nordhoff betr. Typ 29 vom 17.9.1949 (UVW, Z 174, Nr. 1816/1).

428
Nordhoff an Haesner betr. Cabrio-Beetle vom 3.5.1948 (UVW, Z 174, Nr. 1816/3).

429
Technische Entwicklung an Nordhoff betr. Stand der Cabriolet-Erprobung vom 24.6.1949 (UVW, Z 69, Nr. 883/2).

430
Knott an Verteiler betr. Vertrag Hebmüller vom 9.6.1949 (ibid.).

431
Schick betr. Bericht über den Besuch bei Firma Hebmüller vom 27.7.1949 (ibid.).

432
Aktenvermerk Dumperts vom 13.4.1949 (UVW, Z 174, Nr. 1816/1); Knott an Nordhoff betr. Vertrag Karmann vom 2.8.1949 (UVW, Z 69, Nr. 883/2); Schick an Verteiler betr. Cabriolet Typ 15 vom 29.7.1949 (ibid.)

433
Edelmann, Nordhoff, p. 97.

434
„Der populärste und der beste Wagen", Volkswagen Informationsdienst Nr. 6 vom 1.9.1949 (UVW, Z 69, Nr. 883/1).

435
Jahresbericht Verkauf und Kundendienst 1949, p. 9 (UVW, Z 174, Nr. 1033).

436
Haesner an Feuereissen betr. Erst-Erfahrungen mit den neuen VW-Typen vom 6.7.1949 (UVW, Z 174, Nr. 1816/1).

437
Jahresbericht Verkauf und Kundendienst 1948, pp. 6f. (UVW, Z 174, Nr. 1033); Jahresbericht Verkauf und Kundendienst 1949, pp. 6f. (ibid.).

438
Dirk Schlinkert: Von der Reklame zum Marketing, in: Andreas Schilling (ed.): Es gibt Formen, die man nicht verbessern kann. 50 Jahre Volkswagen Werbung, Hamburg 2002, pp. 8-17, here p. 8; Florian Triebel: Marktforschung bei BMW 1957 bis 1964, in: Christian Kleinschmidt/idem (eds.): Marketing. Historische Aspekte der Wettbewerbs- und Absatzpolitik, Essen 2004, pp. 67-83, here pp. 69 ff.

439
Jahresbericht Verkauf und Kundendienst 1949, pp. 8ff. (UVW, Z 174, Nr. 1033); Günter Riederer: Auto-Kino. Unternehmensfilme von Volkswagen in den Wirtschaftswunderjahren, Wolfsburg 2011.

440
Aktennotiz betr. zukünftige Rechtsform des Werks vom 4.6.1947 (UVW, Z 69, Nr. 160).

441
Cf. Mommsen/Grieger, Volkswagenwerk, p. 972; Tolliday, Volkswagen, p. 310.

442
Riechert, Neubeginn, p. 181.

443
Tolliday, Volkswagen, p. 309; Rainer Nicolaysen: Der lange Weg zur VolkswagenStiftung. Eine Gründungsgeschichte im Spannungsfeld von Politik, Wirtschaft und Wissenschaft, Göttingen 2002, p. 3.

444
Tolliday, Volkswagen, p. 311; Turner, Occupation, p. 663.

445
„Rückgabe des Reichsvermögens – Das Volkswagenwerk wieder in deutscher Hand", Hamburger Abendblatt vom 27.9.1949.

446
„Niedersachsen verstimmt. Keine Einladung zur Übernahme des Volkswagenwerks", Die Welt vom 30.9.1949; Nicolaysen, VolkswagenStiftung, p. 26.

447
Ibid., pp. 2f.

448
Schäffer an Erhard vom 4.10.1949 (Bundesarchiv Koblenz, B 102, Nr. 76027); cf. Nicolaysen, VolkswagenStiftung, pp. 26ff.

449
Protokoll über eine Verhandlung im Bundesministerium für Wirtschaft am 8.10.1949, Memorandum für die Besprechung mit Erhard am 8.10.1949 (UVW, Z 69, Nr. 185).

450
Turner, Volkswagenwerk, p. 295.

451
Tolliday, Enterprise, pp. 301ff.; Wellhöner, Wirtschaftswunder, pp. 100f.

452
Jahresbericht Verkauf und Kundendienst 1949, pp. 1f. and 11 (UVW, Z 174, Nr. 1033).

453
Schick betr. Bericht über den Besuch bei Firma Hebmüller vom 27.7.1949 (UVW, Z 69, Nr. 883/2).

454
Jahresbericht 1949 der Volkswagenwerk GmbH, p. 23 (UVW, Z 174, Nr. 457).

455
Haesner an Feuereissen betr. VW-Lieferwagen Typ 29 vom 17.10.1949 (UVW, Z 174, Nr. 1816/1)

456
Ansprache Heinrich Nordhoffs auf der Tagung der Generalvertreter und Großhändler am 20.1.1949 (UVW, Z 69, Nr. 730).

457
Qtd. in Turner, Volkswagenwerk, p. 299.

458
Volkswagen Chronik, pp. 29 and 45.

459
Wellhöner, Wirtschaftswunder, p. 105; Abelshauser, Wirtschaftsgeschichte, pp. 376f.

460
Bericht der Volkswagenwerk AG über das Geschäftsjahr 1960, pp. 18 and 22.

461
Rede Nordhoffs anlässlich der Einsetzung des Beirats am 30.5.1951, p. 5 (UVW, Z 69, Nr. 185).

462
Interview mit Ivan Hirst vom 21.-23.10.1997, p. 136 (UVW, Z 300, Nr. 33).

463
Abelshauser, Wirtschaftsgeschichte, p. 374.

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