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Birth of a Menace

Passing the time of night of 24 January 1942 with some of his confidants Adolf Hitler remarked, “In former times I used to read regularly the publications devoted to the motorcar, but I no longer have the time.” (1) He assured them that he nevertheless continued to keep up with new developments in the automotive field.

Hitler was forty-four years old in the spring of 1933 when he put in motion the rumbling wheels of the benighted regime that would bring disaster to Germany — and bring the Volkswagen to life. Born virtually with the automobile, Hitler was infatuated with it, and with other forms of technology that he associated with his youth, throughout his life.

One easily pictures the leader of the National Socialists leafing through the *Allgemeine Automobil-Zeitung*, *Motor und Sport*, and even *Motor Kritik*, whose enthusiastic and knowledgeable engineer-editor Josef Ganz argued at length toward the end of the 1920s in favor of a small, affordable, and economic *Volksauto* — a car for the people. For the Hungarian-born Ganz the cars that came closest to his ideal were the air-cooled Czech Tatras with their backbone frames and independent rear suspension.

Hitler too was a fan of the Tatras and their designer Hans Ledwinka. He would meet Ledwinka, a fellow Austrian, early in the thirties and be personally and privately briefed by him about the latest Tatra models at the Berlin Auto Shows. But in the early 1920s it was all Hitler could do to become mobile. When he couldn’t be located, his aides quickly realized, he “would be discovered somewhere looking at second-hand motor-cars.” (2)

“Cars were an obsession with him,” said his foreign press attaché Ernst “Putzi” Hanfstaengl. Hitler wanted to give his embryonic storm troopers the capacity to dodge and outwit the police who were trying to break up their brown-shirted demonstrations.



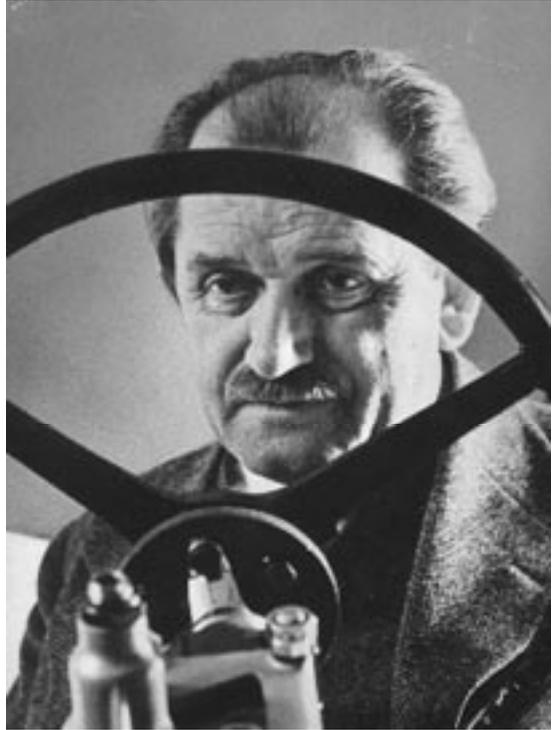
Although Adolf Hitler often rode in Mercedes-Benz cars, as here at the opening of a new section of Autobahn, he was enthusiastic about cars in general and particularly liked the advanced autos made by Tatra.

But first he needed a car for himself to get round to meetings more quickly. He picked up one vehicle which looked like a dismantled horse-cab without a top, but soon exchanged this for a Selve car, with funds he had drummed up in a mysterious way from someone. It was a rattling monster and each end looked as if it was going different ways, but he seemed to think it conferred additional dignity on him and from that time on I do not think I ever saw him take a tram or bus again.

By the time Hitler made his first abortive grab for power, the “beer hall putsch” of November 1923, he was riding in a bright-red Benz. *Riding* is the operative word. In the more than million and a half miles Hitler was said to have covered on the road as politician and dictator he was driven by his chauffeur Emil Maurice, who was succeeded by Julius Schreck and then Erich Kempka. In April 1945, Kempka would bring to the Chancellery garden the forty gallons of gasoline that hastened the incineration of the corpses of Hitler and his wife. (3)

ADOLF HITLER WAS PERSUADED that enhanced motorization should be a major goal of the administration that began with his appointment as Germany’s chancellor on Monday, 30 January 1933.(4) Only a few days later in his speech at the opening of the Berlin Auto Show on Saturday, 11 February, “he set out the guidelines of a mass mobilization of Germany: tax abatements for car buyers, the building of the Autobahns, repeal of obligatory driving school, and encouragement of motorsport.” (5)

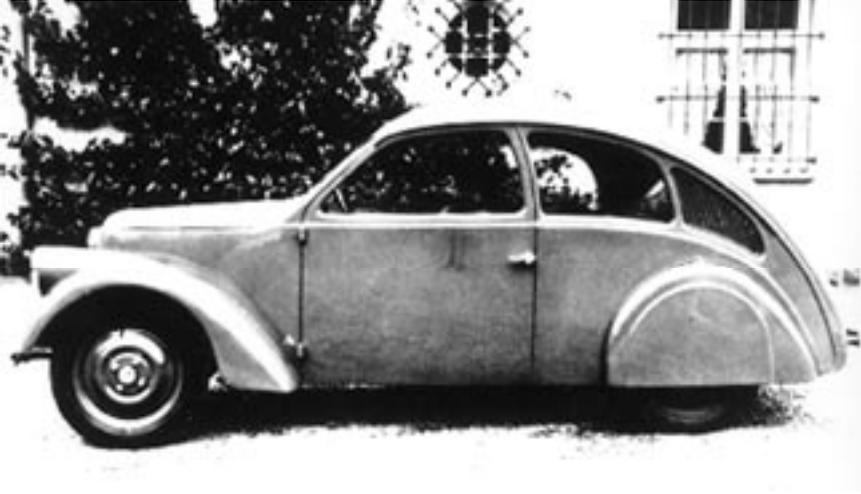
With considerable experience after working on many types of vehicles for Lohner, Austro-Daimler, Daimler, and Daimler-Benz, Ferdinand Porsche was well qualified to open an independent auto design office at the end of 1930 in Stuttgart.



The idea of a people's car was hotly discussed in the press at the time of the 1933 Berlin Show and Hitler was not one to overlook the potential of a people-pleasing idea. Discussions on the way such a car might be built began at once between the Reich Ministry of Transport, headed by its minister-director Dr. Ing. e. h. Brandenburg, and the association of German automakers, the *Reichsverband der deutschen Automobilindustrie* (RDA), and its president Robert Allmers.

The RDA's initial notions were either to stage a prize competition for the design of a new small car or to engage an "outstanding designer" to evaluate their existing models to see whether production costs could be reduced. No particular designer was mentioned, but one name came to everyone's mind.

Only one independent automotive engineer of real standing had his own design studio in Germany in 1933. Ferdinand Porsche, born in Bohemia, had joined Daimler Motor Company in 1923 as its engineering director. The company merged with Benz & Cie in 1926 and three years later Porsche, at age fifty-three, left Daimler-Benz, Germany's flagship producer, following disagreements with the new management over confused planning and decision-making.



A prototype of Porsche's Type 12, a small car designed for Zündapp in 1931, powered by a radial five-cylinder engine in the rear; pictured in front of the Porsche villa in Stuttgart-Feuerbach.

Although their differences were publicly smoothed over in the emollient German style, Porsche's exit from the Stuttgart-Untertürkheim design offices of Daimler-Benz was anything but amiable. Daimler-Benz had decided not to renew his contract after problems cropped up with some of the small cars and commercial vehicles that had come from his team's drafting boards. Porsche had celebrated his arrival in Stuttgart by building a handsome villa in the city's Feuerbach hills with a generous four-car garage and adjoining workshop/storeroom. Now, with his son-in-law Anton Piëch, he sued Daimler-Benz over his contract; the case was settled out of court in 1930. (6)

Porsche did not contract again to design vehicles for a single producer. (7) The new Auto-Union AG, maker of DKW, Audi, Wanderer, and Horch cars, would have been delighted to have him; it became his first and one of his best customers. Porsche explained to his son Ferry, "It makes no sense for me to keep going from one company after another." The always practical Ferry put it differently. "My father found that when he signed a contract with a firm, they could live another ten years on his designs, but he couldn't!" (8)

FROM THE MOMENT FERDINAND PORSCHE and his team of eleven men and women opened their doors at the end of 1930 they were immersed in small-car design projects. In 1931 and '32 three prototypes — Porsche always built them in threes — of a rear-engined small car were designed and built under contract to Zündapp of Nürnberg, a motorcycle firm which insisted on the use of a 1,200 cc five-cylinder radial engine. Numbered Type 12 in the Porsche project list, it never went into production.



Porsche's small-car prototype for NSU, the Type 32 designed in 1933 foreshadowed the main features of the Volkswagen with its torsion-bar springs and air-cooled flat-four engine. Its body shape would become familiar as well.

Neither did Porsche's next small car, the Type 32 designed for the NSU Works in Neckarsulm, another motorcycle maker with big ideas. But its three prototypes, also rear-engined, showed design features that were destined to become familiar. Porsche's new torsion-bar springs were used, with parallel trailing arms in front and swing axles in the rear. The engine was an air-cooled flat-four of 1,470 cc developing its twenty-six horsepower at the unusually low engine speed of 2,600 rpm.

Under construction in 1933 for NSU, the Type 32 prototypes were completed and tested in 1934. But when Fiat reminded the German firm that the two companies had mutual accords in the four-wheeled field, NSU had to abandon the project. For the second time in as many years, Porsche had trimmed his development contracts to the bone to solicit much-needed business only to come up empty. There would be no royalties generated by cars that didn't enter production. These were trying times for Germany's newest auto engineering company, which now had twenty-three people on staff.

To tap another possible source of revenue Porsche and his business partner Adolf Rosenberg began thinking about the design of a racing car. In October 1932 the authorities announced the new limits for cars eligible to take part in Grand Prix racing in 1934–36, setting a maximum car weight of 1,654

pounds (750 kilograms). Rosenberg, who had raced Benz two-liter cars of the 1920s with the engine behind the driver, encouraged the design of a similarly configured racer. Drawings were made and planning undertaken for Type 22 in the Porsche project list, a revolutionary supercharged sixteen-cylinder 4.4-liter racing car.

The firm approached wealthy drivers and other potential sponsors but it was soon obvious that developing the Type 22 would consume more money than they could provide. It was widely rumored at the end of 1932 that Mercedes-Benz would build a car to suit this new formula for Grand Prix racing, the world's premier category for car competition. Before gaining power Hitler had disclosed his intent to back racing-car construction in private meetings with Jakob Werlin, the Daimler-Benz representative in Munich, and well-connected Mercedes driver Manfred von Brauchitsch. He also spoke separately with the famous and popular racer Hans Stuck. He told them, in essence, "You'll get the money as soon as I'm in charge."

This was reason enough for the cash-strapped Porsche engineers to agree to draft and send to Hitler a telegram signed by Porsche complimenting the new chancellor on his encouragement of motorsports in his Berlin Show speech: "As the creator of many renowned designs in the realm of the German and Austrian motor and aviation field and as a co-combatant toward the present success for more than thirty years, I congratulate Your Excellency on the profound opening speech for the 'German Automobile Exhibition'." (9)

IN 1931 FOUR DEPRESSION-HIT car companies — Wanderer, Horch, DKW, and Audi — had sought protection by pooling their assets in a single organization, the Auto-Union AG. One of its guiding lights was Baron Klaus Detlof von Oertzen, in charge of external relations at Wanderer. A keen motor sportsman and a fan of advanced design who had already initiated new projects with Porsche and Rosenberg at Wanderer, von Oertzen became a deputy management board member of the new Auto-Union.

Here was an opportunity for Porsche's racing car. A new automotive combine needed powerful publicity. Its major market rival, especially for the Horch and Wanderer brands, would be Mercedes-Benz, and Mercedes-Benz was going racing. Auto-Union could do the same, Rosenberg and von Oertzen agreed, with Porsche's new Type 22. But the new company's top executives, Richard Bruhn and William Werner, viewed this as a frivolous diversion from the tough job of making and selling cars in a depression. To win them over, von Oertzen would have to get some of the money Hitler was preparing to hand out — to Mercedes.

Von Oertzen's motorsports credentials were impeccable. In 1933 he personally led the company's team of open Wanderer roadsters, a Porsche design, in the long open-road rallies throughout Germany organized by the Nazi's Ve-

hicle Drivers Corps. As well, he was a committed National Socialist. His patrician background was not a handicap. But von Oertzen — a youthful figure with an amiable countenance in a nation that respected maturity — was not a heavy hitter at Auto-Union, not a full management board member.

The baron was shrewd enough to realize that he would need all the help he could get. “I remembered that when Hitler had been released from his imprisonment at Landsberg a Mercedes had picked him up. Never forgetting that, he remained loyal to Mercedes and never drove any other car.” (10) Von Oertzen prepared his arguments well — but no one would let him in to see Hitler, who was immensely busy with the tasks of the first weeks of his administration.

“Then I went to see his deputy, Rudolf Hess,” von Oertzen related. “He and I were pilots of yore; we knew each other from the Great War. I asked Hess to get us an appointment with Hitler. Hess then arranged it for the beginning of March.” The Baron laid his plans carefully. The appointment was set for Wednesday, 1 March 1933. (11) At a meeting on the preceding Monday, Porsche and Auto-Union reached agreement in principle on the outlines of the racing-car project. (12)

Von Oertzen: “To this meeting [with Hitler] I took Dr. Porsche and the racing driver Hans Stuck, who unlike myself was personally acquainted with Hitler.” (13) Porsche and Stuck compared notes the previous evening in the latter’s flat in Berlin-Charlottenburg. “Under his arm he had a thick portfolio of drawings,” Stuck recalled of Porsche. “He didn’t yet know Hitler and asked ‘what sort of fellow’ he would be.” (14)

At the old Chancellery in Berlin, shaped like a horseshoe with its open court facing the Wilhelmstrasse, the trio were given a sombre reception by the Führer. Only his secretary accompanied him. As if they needed reminding, lowering down at them was an oil portrait of Germany’s new leader — at the wheel of a Mercedes-Benz.

Hitler gave no hint of acquiescence to von Oertzen’s opening overtures. The Baron persisted, saying he owed it to Auto-Union’s ten thousand employees to press his case for support. Turning sharply away from the emissary, Hitler addressed Porsche, who opened his portfolio on the glossy surface of the massive conference table. To the engineer’s complete surprise, Hitler reminded Porsche that they had met at the German Grand Prix on Berlin’s AVUS track on 11 July 1926, when Porsche was attending to his team of straight-eight Mercedes racers (young Rudy Caracciola won) and Hitler was in his political wilderness years.

The chancellor asked Porsche what sort of car he would build. One can imagine the impact of the first view of the drawings and plans of the ultraradical Type 22 racing car with its torsion-bar springing, central fuel tank, stubby nose, and elongated tail covering sixteen supercharged cylinders. It looked like the fuselage of an advanced fighter plane. For almost half an hour,



Having raced and hill-climbed successfully for Austro-Daimler, Hans Stuck is shown with one of that company's touring cars. Stuck was a catalyst in the first substantive meeting between Ferdinand Porsche and Adolf Hitler on 1 March 1933.

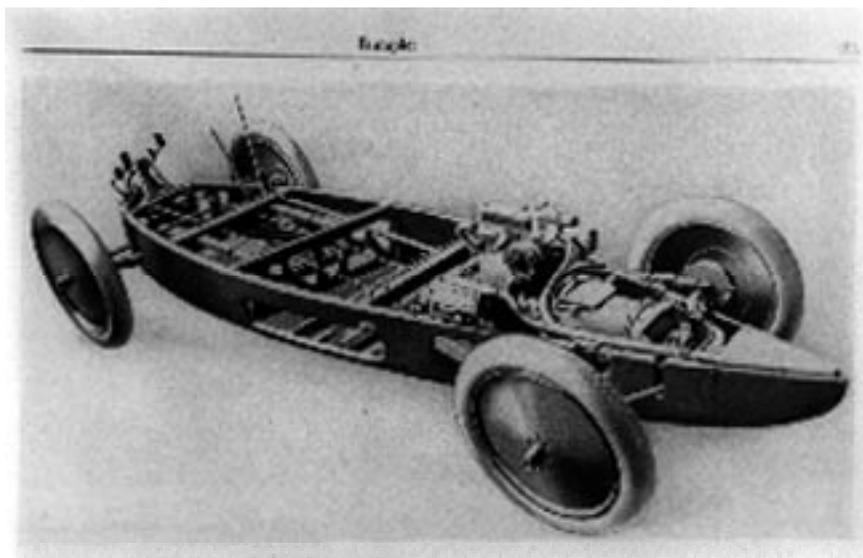


In 1921 the Austrian engineer Edmund Rumpler, working in Germany, introduced the world's first aerodynamic rear-engined production car. The Rumpler Tropfen-Auto inspired rear-engined production cars at Benz and later Mercedes-Benz.

interrupted only by knowledgeable questions from Hitler, Porsche swiftly and in his broad accent explained his car and his ideas.

Sufficiently briefed, Hitler ended the meeting without commitment but with a remark that admitted some hope: "You will hear from me." Three days later von Oertzen was informed that the Auto-Union project would receive government support. The executive had no illusions about the reason why. "Hitler supported the construction of our racing cars. But he did that not for liking me, but rather for liking Porsche." (15).

BY THE AUTUMN OF 1933 THE PORSCHE design office in central Stuttgart was enjoying solvency for the first time. Its business affairs were now being managed by Baron Hans von Veyder-Malberg, a wealthy enthusiast and one-time Austro-Daimler racer who acquired the shareholding of Adolf Rosenberger. Sensing that winds would blow ill for the Jews in the new Germany, Rosenberger decamped to France where he represented Porsche's patent rights and later to California, where he became well-known in auto circles as Alan Roberts. He never had the chance to experience the magnificent Auto-Union racing cars he had helped inspire. Projects at their main offices on the Kronenstrasse and in other Stuttgart spaces begged and borrowed by the Porsche engineers included the P-Wagen racer for Auto-Union, urgently needed for the 1934 season, the Type 32 small car for NSU, and various torsion-bar suspension designs for newfound licensees.



Rumpler's advanced conception of an automobile combined a W-6 engine with a transaxle and swing-axle rear suspension. Its deep-sided chassis was as aerodynamic as the body atop it.

So when Daimler-Benz's Jakob Werlin called ahead in the autumn to say that he was in Stuttgart to visit his own headquarters and would like to pay a courtesy call, Ferdinand Porsche had to sweep quite a few drawings and papers off the desk in his small office.

Why was Werlin visiting? Porsche had a personal affection for the suave salesman; Werlin had defended his designs and ideas in some of the heated Daimler-Benz boardroom battles. But relations between that company and Porsche were now so frosty that any contact between Daimler-Benz employees — even between their wives — and Porsche's people was grounds for peremptory dismissal. (16) And Porsche was building the racing car that would be competing with the new Mercedes-Benz in 1934. Was Werlin hoping to pick up a speed secret or two?

Guiding the conversation away from racing cars, except for some morsels that had already been reported in the newspapers, Porsche felt himself on safe ground in discussing his new torsion-bar patents and his small-car projects for Zündapp and NSU. (17)

But this ground may have been less safe than Porsche thought. Although it is hard to imagine the Daimler-Benz directors losing sleep over the ambitions of pipsqueak NSU, the proud Stuttgart company was in fact about to launch a new rear-engined small car of its own.

Rear-engine Mercedes-Benz cars traced their lineage to the work of a remarkable Austrian innovator, Edmund Rumpler. The first Rumpler automobile was called "the star of the Berlin Show" when that exhibition opened at the end of September 1921 after a ten-year hiatus. On Edmund Rumpler's stand was a chassis, an open model, and a closed version of the car he called the *Tropfen-Auto* or teardrop auto after its uncompromisingly streamlined shape. "Here for the first time in more than ten years," one report glowed, "are shown fundamental transformations in the design of the automobile." Another noted, "These cars attracted immense attention and generally favorable comment, despite their unusual appearance."

The forty-nine-year-old Rumpler had married his background as an automotive engineer with the Adler motor company in Germany and his experience as an aviation pioneer with the Taube of Austrian Igo Etrich, Germany's first volume planemaker, to build a precedent-defying auto. It combined a central passenger compartment with a low-drag teardrop form in plan view, an engine between the passengers and the rear axle, and independent rear suspension by swing axles.)

An experienced inventor who licensed many of his ideas to other manufacturers, Berlin-based Rumpler had been applying for patents since 1915 on various features of his car. At the 1921 Berlin Show his innovative design caught the fancy of Benz engineers Hans Nibel and Max Wagner. Here, they decided, was a promising foundation for the future of the Benz cars made in Mannheim. On 21 January 1922 the management of Benz advised its board

of directors that the company was negotiating a general license allowing unlimited sales of cars based on Rumpler's designs.

Accompanied by a preliminary agreement and a chest of technical drawings, a long-chassis open-topped Tropfen-Auto tourer arrived in Mannheim for experimental work. Its original Rumpler six-cylinder engine was replaced by a Benz side-valve unit. With this test vehicle Max Wagner's chassis men roamed the roads around Mannheim, searching out the car's strengths and weaknesses. Engineer Willy Walb was assigned the task of testing the Tropfen-Auto and conducting its initial assessment and development.

Walb reported to engineers Wagner, Nibel, and Fritz Nallinger that the Rumpler was not ready for volume production. The chassis had important and fundamental problems, especially with the guidance of the swing axles. Thus Edmund Rumpler had to be satisfied with the income from his preliminary agreement with Benz, which decided not to seek a full license after all.

In the meantime Benz had begun preparing to market such a car. Its conservative management board, facing the economic chaos that was postwar Germany, bowed to arguments that it would be good propaganda to anticipate a future rear-engined production model with a racing car of similar layout. Benz engineers commenced work on the design of such a car to suit the 1922 Grand Prix formula for cars with engine displacements of two litres.

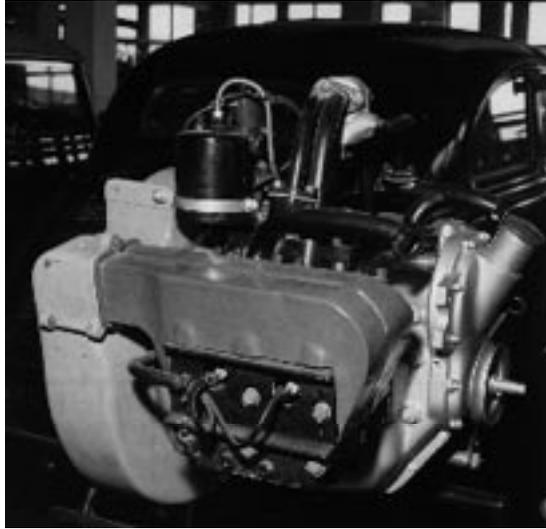
The Benz racer was ready in 1923 — a marvellously slim, perfect machine, an engineer's idea of what a racing car should look like. Its teardrop form was realized in three dimensions, as sleek as a dirigible. This and its Rumpler ancestry won for it the *Tropfen-Wagen* nickname, although it was officially known as the Benz RH series (for *Rennwagen Heckmotor* or rear-engined racing car). Its engine was in fact mid-mounted, driving through a three-speed gearbox to the rear axle.

Competing only once in an international event outside Germany, in the five-hundred-mile Grand Prix of Europe at Monza, Italy, on 9 September 1923, three six-cylinder Benz racers performed creditably. Willy Walb was forced out early with engine trouble. The remaining two Benzes were outdistanced by two Fiats (one scoring the first Grand Prix victory for a supercharged car) and the third-place American Miller racer in this long and demanding event.

Fernando Minoia's Benz was fourth, four laps back at 84.8 mph. Franz Hörner, in the third Benz, was fifth at 79.9 mph, nine laps in arrears. For its entry of the most outstanding new car in the race, Benz received a gold medallion from the Monza organizers. Accepted by Max Wagner, it was an apposite honor for a man and a company trying to cope with the galloping inflation of late-1923 Germany.

Germany's struggling economy contributed to the merger, finalized in 1926, between Benz of Mannheim and Daimler of Stuttgart, makers of Mercedes cars. Three men from Mannheim — Fritz Nallinger, Hans Nibel, and

While still at Daimler-Benz Ferdinand Porsche initiated several small-car projects, including a rear-engined prototype powered by this air-cooled flat-four of 1.2 liters.



Max Wagner — rose to top engineering positions at Daimler-Benz. These men rather than Daimler engineers would fill the vacuum left in the wake Ferdinand Porsche's departure.

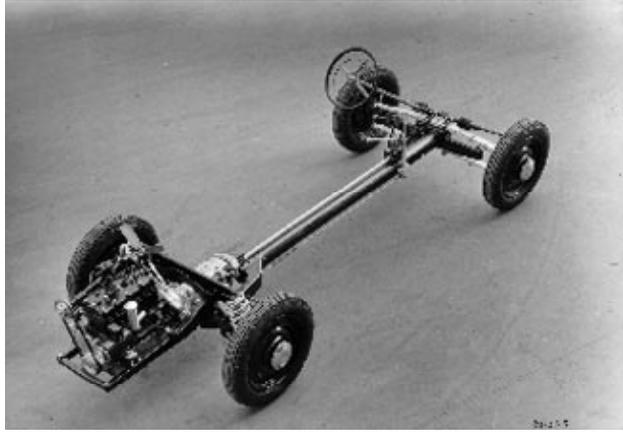
Among Porsche's last projects at Daimler-Benz had been studies for cars much smaller than those the proud company normally produced. One, dubbed the 5/25, was powered by an overhead-valve six of 1,392 cc; in 1927 a test series of thirty cars was built for company executives to evaluate. In 1928 Porsche's attention turned to a 1.2-liter four-cylinder prototype of conventional layout and a more radical concept as well: a rear-engined car with independent suspension and a semi-monocoque body powered by an air-cooled flat-opposed four-cylinder engine of 1,201 cc.

Post-Porsche, Daimler-Benz took an even stronger interest in creating a good new small car that could compete with Opel, recently acquired by General Motors. "The times in which we only sold big luxury cars finally seemed to be over," recalled engineer Josef Müller. "A new era of popular motorization was announcing itself. This was reason enough to think anew about the overall design of the car, especially its space utilization. The four passengers should be given the best-sprung area between the axles." (18)

This, they agreed, was best achieved with a rear-mounted engine.

Nallinger, Nibel, and Wagner rejected the air-cooled flat-opposed four. Noisy and shaky in prototype, it convinced them "that the engine-gearbox unit must not be attached directly to a backbone type of frame," Müller said. "For reasons of noise, it should be flexibly mounted in a fork-shaped frame and be water-cooled if possible. Unfortunately, we gave in to the temptation to use the longer, although simpler, in-line four-cylinder engine instead of the shorter boxer engine."

The Type 130 Mercedes-Benz cradled its 1.3-liter engine and transaxle in a fork at the rear of its backbone frame. An excess of weight on its rear wheels, combined with the swing-axle suspension, made the 130 a wayward handler.



THUS DAIMLER-BENZ REJECTED Porsche's ideas in favor of their own experience with the Tropfen-Wagen to create the 130, a smaller Mercedes-Benz model for Germany's straitened car market. Its water-cooled side-valve engine extended out behind the rear wheels, complete with radiator, a positioning that Josef Ganz wrote in *Motor Kritik* was not a pure rear engine but rather an "outboard-motor." (19)

This, he said, brought "undesirable tail-heaviness," with the car's rear-wheel weight amounting to some 62–65 percent of the total.

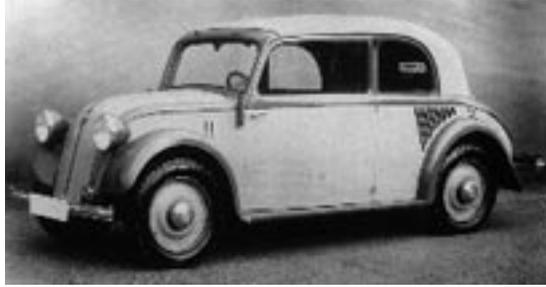
By the time the Daimler-Benz engineers realized that they had erred it was too late to make major changes to the 130's layout.

The first test drives were not at all satisfactory. The congenital defect of the swing axle, in combination with the car being very tail-heavy, had a stronger effect than expected. Nevertheless, by carefully adjusting the softness of tires and springs between the front and rear axles, and by solving the noise problem with tedious adjustments of the four rubber mountings, it was possible to turn an initially rather obstinate vehicle into a reasonably useable one. (20)

The similarity in size and characteristics between the Mercedes-Benz 130 and Porsche's contemporary NSU prototype is discernible from a comparison:

Characteristic	Mercedes-Benz Type 130	NSU-Porsche Type 32
Wheelbase	2,500 mm	2,600 mm
Track	1,270 mm	1,200 mm
Weight	970 kg	750 kg
Engine size	1,308 cc	1,470 cc
Power output	26 bhp @ 3,400 rpm	26 bhp @ 2,600 rpm
Tires	5.00 x 17	5.25/5.75 x 16

Responding to a perceived need to offer a smaller and lower-cost auto in the difficult Depression years, Daimler-Benz launched its 130 model at the end of 1933. It clothed radical engineering in conservative bodywork.



In spite of its longer wheelbase the air-cooled Porsche construction was lighter in its prototype form; a production version might well have been heavier. The Beetle-shaped Porsche design was far more aerodynamic than the Mercedes, which kept a narrow body, running boards, and freestanding headlights. The 130 was priced ambitiously by Mercedes-Benz at RM 3,375; NSU's entry would have had to be cheaper. Nevertheless the two cars would have been close marketplace competitors. (21)

At the end of 1933 the first Type 130 Mercedes-Benz models were launched; this was an important new model for which Daimler-Benz had high hopes. As the company's representative in a major market Jakob Werlin certainly would have seen the 130s in their final preparation for the market during his Stuttgart stopover prior to his first meeting with Porsche. Small cars were not so alien to his agenda as Porsche might have supposed.

CAREFULLY COMPARTMENTALIZING his two strong loyalties, one to Daimler-Benz and one to Hitler, Jakob Werlin had in mind a conversation with the latter when he called Porsche, about a week after their Stuttgart meeting, and insisted that he come to Berlin for an urgent meeting the following afternoon at the Hotel Kaiserhof. Pressed though he was with tasks on all sides, Porsche acquiesced. Chauffeured the three hundred miles to Berlin by his faithful Joseph Goldinger, he presented himself in Werlin's suite at 4:00 P.M. (22) (Insert 0042012)

When Werlin came to the point after opening pleasantries Porsche knew at once that the Daimler-Benz man was a confidante of Hitler, for he, Hans Stuck, and Baron von Oertzen had kept entirely secret their March meeting with the chancellor:

You see, Dr. Porsche, since Herr Hitler met you in connection with the Auto-Union racing-car project, he has gained an even higher opinion of your professional capacity as a designer. Let me come straight to the point. Hitler is very interested in the possibility of small cars, he will be here any minute now and perhaps you can enlighten him on the subject. You told me that you have been working on problems associated with small cars for some time. (23)

Before Porsche had time to react to this revelation, a door to the suite swung open and Hitler entered. After tea was served and amenities observed, the dictator took the floor. Adolf Hitler held forth at length and in detail about the kind of car he had in mind, something to suit the German family with three children, a proper car but not too fancy, economic to run and repair, a real *Volkswagen* — a car that would suit his people.

Hitler, the auto designer manqué, did not hesitate to detail his thoughts. This was to be no crude three-wheeler or cyclecar but a genuine car for the German workingman. It should be four-wheel-drive, Hitler suggested, with a three-cylinder air-cooled diesel engine, preferably front-mounted. Hitler had indeed been reading his car magazines; nor had he overlooked the vehicle's military potential.

This was familiar territory to Porsche but Hitler's answer to the designer's question about the desired selling price was not. "At any price, Herr Dr. Porsche — at any price below 1,000 Marks!" (24) The engineer was staggered. The small cars he was working on for Zündapp and NSU would have cost much more than that just to produce and would have retailed for around 2,200 marks. Porsche never claimed to be a production expert; he had not worked with high-volume car projects. But this seemed a chimerical goal.

After a last glance at his wristwatch Hitler left the suite's sitting room. Jakob Werlin was prepared for the next step. He asked Porsche to consider the matter and to put on paper his thoughts about such a car. The rule of three would apply here as well: one copy to Hitler, one to Werlin, and one to Minister Brandenburg at Transport.



Acting as Hitler's unofficial but influential automotive advisor, Jakob Werlin (left) played a key role in introducing Ferdinand Porsche to the Volkswagen project. Officially he was the Mercedes-Benz representative in Munich.

THESE OFF-THE-RECORD ENCOUNTERS must have taken place in late August or early September of 1933, for the first internal Porsche discussion of the Volkswagen problem was held in the last week of September. (25) Porsche's colleagues Karl Rabe (chassis) and Joseph Kales (engine) agreed that the best way to approach the problem was to use the NSU Type 32 project as a basis from which such a car could be developed.

Draft after draft resulted in a final "Exposé" dated 17 January 1934 that was crafted with care and elegance. (26) Its core was four long paragraphs, followed by a technical appendix, with sketches, and a table comparing the draft specifications with a dozen other German small cars. It was complete but easy to digest, revelatory to the expert but not so esoteric as to daunt the uninitiated.

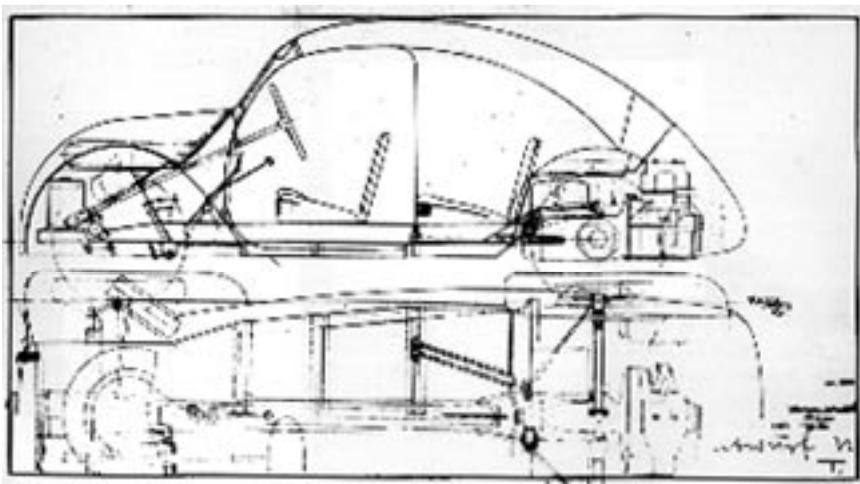
Among the small cars listed in the table were several that Porsche did not intend to emulate, as he made clear with a certain wry wit. "As a 'Volkswagen' I comprehend no small car that carries forward the tradition of the pantograph in this sector by the artificial reduction of its dimensions, its power, its weight and so forth." With this he dismissed the heavy and costly small cars made by Opel, Ford, and Adler. He could also have dismissed the Mercedes-Benz 130, but although recently launched it did not appear on his comparison table.

Neither did Porsche and his team intend to build a cyclecar, which is the only appropriate description for some of the more quixotic German market offerings of the time. Josef Ganz had done more than talk about advanced and efficient small cars; he had designed and built them too. As with Porsche, his patrons had been motorcycle makers with ambitious ideas. Zündapp considered Ganz's ideas and Ardie built a Ganz-designed prototype. Best of all, in 1932 Standard introduced its Superior small car to Ganz's designs.

Advertised as the "deutschen Volkswagen," the Standard had a Tatra-like backbone frame with transverse leaf springs for independent springing at front and rear. There was no "outboard motor" here; Ganz practiced what he preached by putting his transverse air-cooled half-liter twin forward of the rear-wheel centerline.

Offering two-plus-two seating at best, the Standard had a wheelbase of only 79 inches and a small price as well: RM 1,590 in 1932 rising to RM 1,720 in 1934. This kept it below the RM 1,800 of the cheapest "proper" car, an Opel. But its sales were modest: 195 in 1933, 185 in 1934, and only handfuls in subsequent years.

Strikingly similar in appearance to the Standard with its coal-bucket nose, freestanding headlights, and two forward-opening doors, another cyclecar was launched just before Porsche completed his report. This was the Bremen-built Hansa 400 launched by Carl Borgward. Its springing was like the Standard's but its proprietary Ilo air-cooled two-stroke engine was placed



In July 1934, only a few months after Porsche submitted his January 1934 “Exposé” concerning the design criteria of a future Volkswagen, his staff was already generating sketches and layouts of just such a car — here with a two-stroke air-cooled engine.

longitudinally behind the rear axle. It sought to accommodate four with its 94-inch wheelbase, yet it underpriced the Standard at RM 1,700 thanks to its body of plywood protected by leatherette.

Such crude small-car design strategies were tacitly rejected by Porsche in his “Exposé.” A proper Volkswagen, he wrote, had to be a car of normal dimensions “but of relatively low weight, which is to be achieved through fundamentally new techniques.” These methods were to include “equipment as foolproof as possible” to keep servicing simple and cheap. Porsche added that the car should not be designed for a narrow and limited market. “Rather through a simple change of its bodywork it should be adaptable to all reasonable circumstances, thus it should be suitable not only as a passenger car but also as a delivery vehicle and for certain designated military purposes.” In making the latter statement Porsche showed the attention he had given to the briefing he had received from Hitler.

An accompanying sketch of the car’s layout showed an NSU-like flat-four engine; in the specifications the alternative of a three-cylinder radial air-cooled two-stroke was presented. This clearly responded to Hitler’s 1933 request although not it did not specify whether the engine’s ignition was by spark plug or high Diesel compression. (Insert 0042013)

As to his car’s selling price, Porsche was on the spot. He believed a thousand marks to be out of the question — yet this was what Hitler wanted. Clearly the car had to be priced lower than anything on the German market. After much cogitation Porsche opted for the figure of RM 1,550 in his “Exposé.” (27)

The implications of the pricing were subtly set out in the specification table that accompanied the report. It listed the cost per kilogram of the cars, which was typically in the range of three to four marks. Only GM-owned Opel achieved lower figures, RM 2.7/kg for one model and RM 2.4/kg for another. The latter was a bewhiskered product, dating in concept from a decade earlier when Opel had introduced series production in Germany. At RM 1,550, Porsche's proposed cars would be in the specific cost bracket of RM 2.4–2.5/kg, similar to the best Opel performance.

To reach Hitler's desired price target, an unprecedented level of RM 1.6 per kilogram would have to be achieved. With high enough production volume this could be seen as possible; the total production of all types of Opel in 1933 had been a scant 39,000 units (Opel's output would jump to 72,000 in 1934).

The target of RM 1.6/kg could be reached, Porsche maintained in confidence to his associates, based on the production efficiency achieved in America not by mass-producer Ford, which was exceptional, but by mid-range producer Buick, part of the General Motors family. Buicks, said Porsche, sold for the equivalent of only RM 1.5/kg. All Germany had to do was produce as rationally, he argued, sometimes to the irritation of his listeners. (28)

Clearly, however, to contemplate a selling price of RM 1,000 an order-of-magnitude production volume increase from traditional German levels would be needed.

Such a leap in Germany's car output suddenly seemed possible on Saturday, 3 March 1934, when Hitler opened the Berlin Auto Show with an elaborately staged address in a swastika-bedecked hall. Porsche was in the audience for the highly politicized speech that began in the dying fanfare of an army band. Hitler, in military uniform, issued a clear call for action.

Germany has only one automobile for every one hundred inhabitants. France has one for each twenty-eight and the United States one for each six. That disparity must be changed. I would like to see a German car mass-produced so it can be bought by anyone who can afford a motorcycle. Simple, reliable, economical transportation is needed. We must have a real car for the German people — a Volkswagen! (29)

Hitler urged Germany's auto industry "more and more to design the cars that will compellingly attract new buyers by the millions."

IN 1933 GERMANY HAD ONLY 522,000 cars in circulation, less than half the size of the fleets of Britain or France. Its total vehicle production in 1934 was 147,000 units (127,000 of them cars) against Britain's 257,000 vehicles. Thus when in 1934 the first discussions of production rates of a putative people's car proposed 200,000 per year or, including exports, 300,000 at most, this was viewed as a colossal expansion of domestic car output.

The expansion plan was sugar-coated for the delicate digestion of the existing carmakers. It was presented as a means of creating a new cooperatively produced sedan that could absorb some of the excess capacity of the German auto industry, still suffering from years of economic depression. But the industry was already increasing its output more than a year after Hitler had first promoted motorization; instead of being a new source of business for existing producers the Volkswagen was seen as a deadly rival.

In their conclaves at the RDA, Germany's automakers agreed among themselves that Hitler's thousand-mark price target was ludicrously low and that the high running costs of a car would prevent his intended motorization. Their natural instinct in any case was to curb the socialistic notions of this radical new government, which had been proclaimed the Third Reich with Roman symmetry on the ides of March 1933.

Based on a calculation by Opel, the RDA estimated that a price in the range of RM 1,200 to RM 1,500 might be possible. Asked to think in terms of a car that would cost about as much as a medium-sized motorcycle with sidecar, the RDA experts fastened on a three-wheeled configuration as desirable, with the engine and a single wheel at the rear. In this they received encouragement for a time from the Transport Ministry. Obviously, a three-wheeled car would offer minimum competition to their own more elaborate four-wheeled designs. (30)

Through his minister of transport, Hitler expressly requested the carmakers' involvement. They had an obligation, their brief specified, of "furthering car ownership among the German people, on the basis of shared responsibility, by employing the leading forces in the automotive world, with all the means serving the good of the German people." (31) In response in 1934 a small commission was set up within the RDA to study the matter.

As Germany's leading producers, Adler, Auto-Union, Daimler-Benz, and Opel were represented in the commission. Ford would have qualified for inclusion but it was omitted because, after all, the aim of the project was to "out-Ford Ford." (32) In fact U.S.-owned Opel's participation would turn out to be short-lived.

The commission's éminence grise was a reticent executive, Franz Josef Popp, head of Munich's BMW, a maker of motorcycles and airplane engines that had become a carmaker in 1929 by taking over the bankrupt Dixi works. Also a member of the Daimler-Benz supervisory board, Popp was friendly with that company's chief Wilhelm Kissel, who would frequently compare notes with his colleague on the Volkswagen problem.

NO HOTTER POTATO HAD EVER BEEN dropped in the laps of the RDA, its political chief Robert Allmers, and its general secretary Wilhelm Scholz. Like most trade associations the RDA functioned at the speed and wit of its lowest common denominator. It took the society much of April

and the early part of May 1934 to get a ruling on a point it was debating with the Transport Ministry, one that had been decided long before by the Reich chief automobile designer, Adolf Hitler: namely that a three-wheeled vehicle would not after all be acceptable. Neither was the idea, mooted earlier, that three or four big carmakers should pool resources in a combine to produce the car.

The fourth and last paragraph of Ferdinand Porsche's January 1934 "Exposé" recommended that his company be commissioned by the government to design, build, and test a Volkswagen prototype. About a year would be needed, it stated, to prepare such a prototype in a form suitable for testing and evaluation by an independent commission. "In the event of a satisfactory outcome of the tests," Porsche wrote, "the government may decide to recommend to the industry the series production of this model as the German Volkswagen." (33) Porsche asked that his development costs be reimbursed and that he be paid royalties on any of his patents that were used in the vehicle.

Listening to Hitler's speech at the opening of the auto show in Berlin, Porsche realized that his "Exposé" had been read by the Führer himself. After the show this was confirmed by Transport Minister Brandenburg, who added the obvious point that Porsche's proposed selling price was much higher than the figure specified by Hitler and thus would require further study by the engineer. (34) The meeting gave Porsche cause for some confidence; he checked with Brandenburg's office in early May but was told there was still no news.

Unofficial but no less effective for that, the Werlin channel opened again in the last week of May. In another "non-visit" to Porsche's office, Jakob Werlin ignored the exploits of the Porsche-designed Auto-Union racing car, which was setting new speed records while its Mercedes-Benz rival was still in the garage. He turned instead to the matter of the people's car. "You will shortly receive an official order to proceed with the development of the Volkswagen. This order will come not from the Ministry of Transport but from the Society of German Automobile Manufacturers." (35)

Werlin explained that this decision had been reached at the level of the chancellor in order to ensure a commitment by the car producers to the project. If they were paying for the development, Hitler had reasoned, they would be more likely to exploit its fruits. The RDA's special commission reached a decision to this effect on 8 May; the full RDA board endorsed it on 28 May. (36)

Official notification to Porsche from the RDA's Robert Allmers followed in early June, after which a contract was hammered out. This was no easy matter.

The Ministry of Transport after receiving Porsche's memorandum certainly treated it with bureaucratic thoroughness, in the way only ministry officials are capable. A few sheets of type-written matter and five drawings within not quite

five months had become three hefty files, and within those last few weeks some of Herr Allmers' equally bureaucratic staff showed their capabilities not only by preparing a lengthy and very involved contract, but also an endless number of notes on points which had to be discussed at those meetings. (37)

Ultimately the actual contract, signed on 22 June, was relatively brief. So was the time for its realization. It gave Porsche only six months to design the Volkswagen and four months to build it; when it entered production he would be entitled to a royalty of one mark per car.

Although the contract called for payments to Porsche's companies of twenty thousand marks monthly, adjustments were made in the course of the project. On 7 December 1934 the number of prototypes was increased from one to Porsche's traditional three. Work started at the agreed monthly fee, said the RDA's Wilhelm Vorwig, "then increased to 30,000 and 40,000 before hitting 50,000 marks [monthly] for a short period. The contract lasted about thirty months, instead of the agreed-upon ten, and payments came to a total of more than one million marks." (38)

The Porsche people had no workshop of their own, so a drill press, milling machine, and two lathes were installed in the fortuitously large Porsche family garage in Stuttgart's Feuerbach. There the cars were assembled from components made by many subcontractors under the supervision of Porsche's son Ferry, for whom the premises had previously been a home workshop. By 1935 the Porsche staff consisted of thirty-three engineers and a workshop crew of five, which would grow to twelve the following year.

By the latter part of 1935 they had built two vehicles, a V1 sedan and V2 open model, to test various components and engines, the latter proving to be the toughest nut to crack. That the final engine used was designated the E-Motor indicates how many attempts had preceded it. (39)

When he opened the Berlin Auto Show in February 1935, the chancellor could ignore the project's delays. In fact he identified Porsche publicly as the designer for the first time and hailed the fact that the plans for the revolutionary car were "completed." During 1935 Hitler was preoccupied with other tasks, such as the reoccupation of the Saarland, establishment of the swastika banner as the German national flag, elimination of the rights of the Jews, and coping with Germany's censure by the League of Nations.

The first car in the final VW3 trio of prototypes was ready in February 1936. Built with the help of Daimler-Benz, two of the three had wood-framed bodies and one an all-steel body of the proposed design. At the Berg-hof, his villa on the Obersalzberg in the Bavarian Alps, Hitler was shown two of the VW3 prototypes on the morning of 11 July 1936. One was presented to him again at teatime minus its body, demonstrating the easy adaptability of its chassis to military requirements.

Finally on Monday, 12 October 1936, after a weekend that must have been grueling, not three but five — including the first two test cars equipped



Ferdinand Porsche inspects one of the VW3 prototypes in early 1937. A fleet of thirty of these cars, produced by Daimler-Benz, was subjected to extensive tests by teams of SS drivers.

with the final flat-four engine — ur-VWs were officially handed over to the RDA for testing. Wilhelm Vorwig directed the tests, which were conducted by drivers from the Porsche staff partnered with RDA observers, covering both country roads and Autobahns at a rate of some 500 miles a day every day but Sunday. Problems were rife, but the little cars were convincing.

After 31,000 miles of tests, completed by three cars just before Christmas, Vorwig's conclusions were guardedly positive. "A number of shortcomings were discovered in the 50,000 kilometer drive. They are all, however, not of a basic nature and the expectation is that they can be overcome technically without great difficulty. Performance and handling characteristics are good. The car has shown qualities which would appear to recommend further development." (40)

FURTHER DEVELOPMENT WAS ALREADY under way. The Porsche office prepared a revised design in 1936 which was built in a series of thirty by Daimler-Benz, to Porsche's drawings, at the end of 1936 and early in 1937. These cars became available at Eastertime for another round of tests, this time to be conducted by teams of drivers supplied by the SS, the elite Nazi police force. By now "the RDA really didn't matter any more, although nobody had bothered to tell them." (41)



A key Porsche engineering aide was Franz Xaver Reimspiess, left, with whom Ferdinand Porsche is discussing a cooling fan. Reimspiess is credited with the design of the distinctive VW circular emblem.

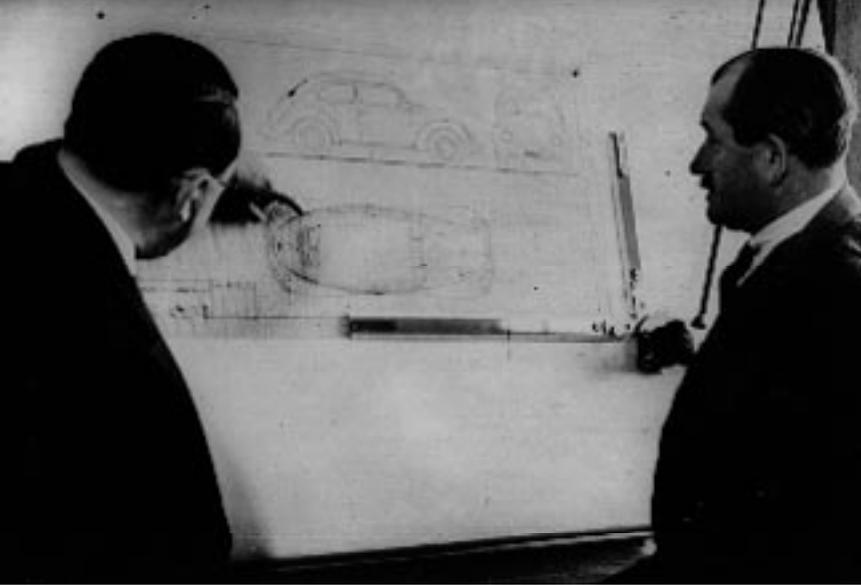
A car of manifest strengths and weaknesses, the VW was originated in its entirety by Ferdinand Porsche and his team.

Free of any sort of tradition and without respect to the production methods that were customary in Germany or in any German auto factory at all, development could now take place purely from the standpoint of function, whereby Porsche, with his confident technical instinct, always took care that they designed with simplicity and lightness, *but not crudely.* (42)

One of Opel's senior managers had ample opportunity to see Porsche and his men at work. Dubious though he was about their assignment, he respected the way they attacked it.

Porsche and his team really went to work. They meant business, not lip service. This outstanding man was engineer and designer not by profession, but at heart. Short-tempered and energetic, he easily got in trouble with his employers before long. He was not regarded as being successful in the normal sense of the word, but he was a fanatic and an unusually gifted engineer. He had his own very clear-cut ideas about a small car, and he gripped with all ten fingers this singular opportunity to materialize his dreams. He had the rare gift of surrounding himself with a team of devoted followers who loved him and were dedicated to his ideas. Among them there was a unity and a determination to accomplish the outstanding and an unbound willingness to follow their leader and idol. His was one of the truly great minds of engineering history. (43)

The Porsche design team was led by Karl Rabe and included Joseph Kales, Erwin Komenda, Karl Fröhlich, Josef Mickl, Josef Zahradnik, Franz Xaver Reimspiess, and Porsche's son Ferry. Other engineers would contribute to the VW as well, including those at Daimler-Benz who built the proto-



Checking a drawing of the final Type 60 KdF-Wagen with Ferdinand Porsche in 1938 is, left, Karl Rabe, Porsche's chief engineer. Rabe guided Porsche's visions along practical lines.

type series and a cadre of German-Americans who had been recruited from the Detroit auto firms to help make the new car manufacturable.

The RDA's Wilhelm Vorwig was well aware of the special role of Karl Rabe. "It was Rabe's extraordinary ability that made the bold Porsche concept come into reality. Yet he was always in the background, never getting credit for his work. Without Rabe, there would be no Volkswagen." (44)

Vorwig's RDA report was critical of the performance of the cars' cable-operated brakes. Ferry Porsche acknowledged that the mechanical brakes were an out-and-out economy measure. Not only were they cheaper to make, they also avoided royalty payments to Lockheed, which held the key patents on hydraulic brakes. The brakes, admitted Ferry, "were, in fact, a feature about which my father had always had misgivings." (45)

While testing and development continued, a solution was still needed to the knotty problem of producing the people's car. The idea of sharing production among the domestic manufacturers was rapidly overtaken by their own increasing output in response to Hitler's twin-pronged promotion of both domestic motorization and export sales. German car and truck exports were soaring from 13,250 units in 1934 to 36,500 in 1936 and 68,500 in 1937. From May 1937 the pressure to export was further increased by a new system of steel allocation that rewarded auto companies for higher exports by granting them a larger share of the limited steel supply.



Franz Reimspiess originated the concept of the air-cooled flat-four engine that saved the VW project after a number of other alternatives had been explored. This is an early prototype of what an Opel executive called an “airplane engine.”

Most aggravating for the Third Reich was the news that American-owned Adam Opel AG was accounting for almost half the nation’s vehicle exports and was selling one-quarter of its output abroad. The company, one of the oldest in the industry, was benefiting from the production expertise of its General Motors parent. Opel was a member of the RDA, but that group soon became paranoid about showing Opel any of the VW project drawings in case the Americans were to steal their precious secrets.

The RDA had good reason to be wary of Opel. Backed by James Mooney, president of GM’s Export Corporation, Opel’s honorary head and RDA life member Wilhelm von Opel had gained an audience with Hitler to present his company’s credentials to build its version of the Volkswagen but not, of course, at so low a price as one thousand marks — or RM 990 as it was now being interpreted. Hitler was polite but showed von Opel the door. (46)

Pointedly, when the RDA called for a high-level discussion on the VW project at Coblenz at the time of the German Grand Prix on 27 July 1936, Opel was not invited. The RDA was taking literally Hitler’s decree that the Volkswagen was to be a “purely national matter.”

It didn’t help that the Opel executive who spoke most often on his company’s behalf at the RDA was consistently critical of the project. When he saw the flat-four air-cooled engine designed by Franz Xaver Reimspiess, the E-Motor that saved the project, he exclaimed, “This is an airplane engine! You can’t afford to put an airplane engine in a car selling for a thousand marks.” (47)

Airplane engines of another kind were beginning to absorb both financial resources and precious raw materials in a Germany that was rich in neither. Rearmament and the Reich’s ambitious goals for its motor industry were on a collision course. Carmakers complained that they couldn’t achieve

their production targets for lack of materials; what would be the added impact of a huge Volkswagen project? The RDA expressed its willingness to fund further action to produce a Volkswagen, but its exclusion of Ford and Opel made this a hollow promise that it lacked the resources to fulfill.

By the spring of 1936 the progress on the VW prototypes, slow though it was, was quicker than the resolution of the problem of manufacturing them. The solution was discovered not by the government but by the car industry, specifically by the fertile brain of BMW's Franz Josef Popp. A wealthy new institution established under the umbrella of the Third Reich was to provide the key.

THE NEW GOVERNMENT MOVED quickly on 2 May 1933 to abolish all of Germany's 169 trade unions. Only four days were needed to expropriate their funds and facilities and eradicate their existence. Sequestering their money was easy; the unions had established a central bank, the Bank of German Labor (BdA), which was simply seized. The BdA was soon relaunched as a Nazi full-service bank that ultimately boasted thirty-five branches.

The destruction of the unions and the creation in January 1934 of a new entity to replace them, the German Workers Front (DAF), were chiefly the work of Dr. Robert Ley, whom his biographer described as Hitler's "paladin."

Ley was an important prototype of a certain Nazi — one whose fanaticism, idealism and commitment to Hitler and the movement made him an ideal "old fighter" but whose inadequacies in the management of power, whose inability to gauge means to ends, would cripple the effectiveness of the regime and eventually lead to its destruction. . . . He was rough and tough, uninhibited, given to emotional outbursts, venal and corrupt, and astonishingly lacking in good judgment. He was also a notorious womanizer who drank too much. At the same time, he was an intelligent man who had real organizational ability and a knack for choosing talented subordinates, at least in the upper echelons of his agencies, to run things for him during his frequent inspection tours across Germany. He was also exceedingly ambitious with a need to be "somebody." (48)

Ley's role in the birth and adolescence of the Third Reich was no less important because labor was the societal group in Germany that had been least responsive to the appeal of the National Socialists. Under Ley's new Law for the Organization of National Labor it mattered not how workers felt; they were part of the DAF anyway. Strikes, needless to say, were outlawed.

The result, wrote Stephen Roberts in 1938, "is that today the Labour Front has 26,000,000 members as compared with the 5,000,000 members the unions had when they were taken over. When it is remembered that the population of Germany is only 66,000,000 and that women are discouraged from entering the employment market, it will be obvious that practically all working Germans belong to this new super-union." (49)

Regular contributions to the DAF were made by both workers and employers in relation to the sizes of their pay envelopes and turnover respective-

ly. The funds were banked by the BdA. Money also flowed in from workers' subscriptions to the holiday layaway plans of the immensely successful *Kraft durch Freude* (KdF) or Strength through Joy movement, an idea copied by the German fascists from their Italian counterparts. In Italy the service was known as *dopo lavoro* (after work), which was literally translated into *Nach der Arbeit* when the Nazis set up a similar organization on 29 November 1933. Soon afterward *Kraft durch Freude* became the name of the scheme set up by Robert Ley to order the free time of his German workforce.

The KdF organized domestic and foreign travel and health-oriented holidays for workers at bargain prices. The cost of a complete two-week holiday in the Alps, everything included, was the equivalent of only sixteen dollars; a week by the North Sea was six dollars and a trip to Italy — a dream holiday for working-class Germans — thirty-nine dollars. Two ships were specially built and ten more chartered to float vacationing workers to Madeira or the Norwegian fjords.

Starting at two million KdF-organized holidays in 1934, the number boomed to five times that by 1938 — one German worker in three was enjoying a KdF-supported break. *Kultur* was also catered for by the KdF. It organized tickets at special rates for the theater, opera, and concerts, and even had its own ninety-member symphony orchestra bringing the acceptable classics to all parts of the nation.

The German Workers Front and the KdF movement became such money-spinners “that by mid-1934 the Reichsbank President, Hjalmar Schacht, was moved to complain to Hitler about it. While total deposits at the Deutsche Bank had scarcely increased at all during the first half of the year, BdA deposits had gone up by 100 million marks, in part, hinted Schacht, owing to its relations with party organisations. By 1938 the BdA had over 20 million marks in cash reserves, current deposits of over 512 million and a turnover of over 15 billion marks.” (50)

IN 1936 FRANZ POPP WAS pondering the dilemma that the VW project posed for the domestic motor industry. He foresaw numerous pitfalls. He rejected a role for U.S.-owned Opel, which he saw as gaining an unfair advantage from such participation. He was worried about the potential impact of the VW project on the industry's suppliers, who would try to gouge the other car producers to make up for the losses they would suffer on their enforced distress-priced sale of parts and materials to Hitler's pet car company. (51)

Like his colleagues, Popp feared incursions by the Beetle into their traditional segments of the small German auto market. But one way to prevent this, he mulled in the summer of 1936, would be to restrict sales of the new car to members of the DAF — the self-defined working class of Germany, the people for whom the new car was really intended. And the DAF, he thought,

could use its vast resources in some way to subsidize the price of the car so that Hitler's price commitment could be met.

This was the seed of the idea that grew into a big beanstalk. In discussions with Daimler's Kissel, Popp developed it further. What would happen if the government didn't tax VW production? His experts told him "that twenty-five to thirty percent of a car's production costs at that time in Germany were made up of taxes." Around 20 percent of the sales price consisted of distribution costs. "From these thoughts," he wrote, "Kissel and I formulated the following solution:"

1. The Labour Front [DAF] would become the sponsor of the Volkswagen Works, because it was a union of all those for whom Hitler wanted to create the Volkswagen.
2. The Labour Front possessed enough capital to set up the Works so that neither the existing car industry nor the banks would be called upon financially.
3. To maintain tax exemption, the Volkswagen Works would have to be set up as a public utility, meaning that it would be non-profit-making.
4. To make savings on the majority of the distribution costs, the Labour Front would undertake every aspect of marketing through its many branches. (52)

This made sense for the auto industry but how was it to be transformed into an idea that Robert Ley would welcome? Franz Josef Popp decided to discuss the question with the Reich trustee for labor in BMW's home state of Bavaria, Kurt Frey, whom he thought to be a man with considerable influence in the court of Hitler's paladin. Frey encouraged Popp to write down and send him his ideas, which he did on 24 and 25 June 1936. After the RDA meeting in Coblenz in July Popp gave copies to Werlin as well.

Not long afterward Frey reported back that Ley had received the idea with "approbation." This was not on its face surprising, for Ley was the master of exploiting his beloved DAF, a worker's organization, in the world of capital enterprise. The Volkswagen was already widely discussed as following the example of Ley's *Volksempfänger* (people's radio), a standard design of which fifty thousand were installed in factories at 295 marks apiece to trumpet the latest wisdom of the Führer. Also in the DAF pipeline were the people's refrigerator (*Volkskühlschrank*) and the people's dwelling (*Volkswohnung*).

But Robert Ley was no babe in the dark forest that was the Third Reich. He protected his flanks by asking the DAF's Institute of Labor Science (AWI) to assess the merit of Popp's idea. This body, whose main mission was to propagate the teachings of the DAF, rendered its conclusion at the end of October. The AWI was entirely against the idea.

The institute judged that taking the project away from the existing industry would only encourage a "flight from management responsibility" of a

kind that was already evident in Germany. (53) Too many industrialists seemed ready to let the Nazis take the initiative in running their businesses; the AWI recognized that this placed entrepreneurship at risk. The VW project would also expose the DAF to potential perils of unknown dimensions of liability, not to mention hazards to its prestige and reputation among the very people it was intended to serve.

Independently and in parallel another approach to the wealthy BdA bank was being made around the same time. Wilhelm Vorwig called upon the bank to help provide the funding that the RDA needed to carry out the tests of the just-delivered trio (plus two) of VW3 prototypes. Joining him in the request was Otto Schirz, who had close links to none other than the influential Jakob Werlin. (54) Here was another substantive contact between the DAF and the VW project.

In the meantime, however, unbeknownst to Popp and his colleagues, Robert Ley continued to regard the DAF-VW link as commendable. The shrewd ally of Hitler solved the problem of the negative AWI finding with insouciant ease: he commissioned another study. Happily, this overturned the earlier conclusion and judged involvement with the Volkswagen to be an excellent idea for the DAF. By the end of 1936 the DAF and Ley had decided to take on the responsibility for building and selling Hitler's dream car.

Although Hitler hadn't yet blessed the alliance, Ley felt confident enough about his new role to discuss it with Reich Propaganda Minister Joseph Goebbels in January 1937. In his diary for 15 January Goebbels wrote, "There we carry out something big that will give the Führer pleasure." Hitler was indeed visibly relieved when, just prior to the 1937 Berlin Auto Show, Ley asked for and received his formal blessing to take charge of a task which was not only gargantuan but potentially, in economic terms, impossible. (55)

On 20 February 1937, a Saturday as usual, Adolf Hitler opened the Berlin Show with a speech in which he made clear his determination to achieve the production of a car for the people. That evening the dictator invited four hundred car-industry workers to dine at the Kaiserhof Hotel in Berlin. (56) There, in the presence of Italian labor leader Tulio Cianetti, Hitler announced his assignment of the VW project to Robert Ley and the DAF. Ley in turn named his deputy, Bodo Lafferentz, as his representative on the board of the Volkswagen project.

This momentous decision was not made public at the time. Popp and his colleagues were unaware that their solution to the problem of producing the people's car had been adopted. This news blackout prevailed for more than a year, indeed until just before the VW factory's cornerstone was laid in the spring of 1938. Ley couldn't resist mentioning his new task in a speech in mid-June at a congress in Hamburg but only one journal ignored the "harmonizing" practices of the Reich press office and published his proud proclamation; it attracted little notice. (57)

The DAF's reason for keeping the swaddling on its new baby was simple enough: it didn't want to arouse excessive public expectations in advance of the launch of the project, expectations that were already high enough and which, as the AWI report stated, could rebound against the DAF if the hopes of would-be Beetle owners were dashed. As well, many aspects of the actual financing of the project still remained to be resolved.

ONE DECISION THAT COULDN'T WAIT too long was the choice of a place to put the factory that would build the cars. In fact the need for a speedy decision was the principal reason for the selection of a large site on marshy ground north of the Mittelland Canal on the Lüneberg Heath near the village of Fallersleben, and south of the canal in Lower Saxony. Hitherto Fallersleben's claim to fame had been as the birthplace (in 1798) of author and poet August Heinrich Hoffmann, best known for his *Tales of Hoffmann* and his authorship of the words of Germany's national anthem.

Spotted from the air by Bodo Lafferentz, making a reconnaissance of the region west of Berlin in the summer of 1937 in a Junkers Ju 88, the site had one great advantage — most of its area was owned by only two noble families: the von der Schulenburgs and the von der Wenses. They did not give up the land readily, but give it up they ultimately did — the Schulenburgs 7,600 acres, the Wenses 2,500 acres, and twenty-eight other parties the balance of the 15,000-acre site that was needed for both factory and city, on both sides of the canal. (58)

Isolated though it was, the site met Hitler's criteria, expressed on 11 July 1936, that it should be in central Germany for strategic reasons and have good transport connections. Rail links were close; the Autobahn was nearly finished and the Mittelland Canal joined the region to Prague, Berlin, and the Oder River in the east and the ports at Bremen and Hamburg in the west and north.

But the site was remote from its suppliers of parts and materials. It also required the building of a town on the south side of the canal to house its workforce. For these reasons the choice was openly and cheekily criticized by young Ferry Porsche. Ironically, however, its out-of-the-way location would contribute not only to the plant's ability to recover and resume operations after the war but also to its survival as a car-producing complex.

The DAF commissioned architects in the late summer of 1937. Planning of the new town (but not the factory) was the responsibility of an architect named Peter Koller, who trained under Professor Heinrich Tessenow and his assistant Albert Speer. Like some other students, wrote Speer's biographer, "Koller, a fresh recruit to Nazism, changed the subject in tutorials from architecture to politics." (59)

Naming the new town was a particular challenge. Names favored by Robert Ley were *Neu-Fallersleben* and *Porschestadt*. Porsche's son-in-law,



Watched by Porsche at left, Adolf Hitler examines the Beetle scale model he received on his birthday on 20 April 1938. Between Porsche and Hitler is Robert Ley, whose DAF would build the factory and sell the car. Behind Hitler is Jakob Werlin and at right Ley's deputy Bodo Lafferentz.

Austrian solicitor Anton Piëch, mooted *Volkswagenstadt*. Hitler made the final decision. The town would be named *Stadt des KdF-Wagens* after the Strength through Joy movement, he decreed, at least until the end of the war. Then they could make a longer-term decision. (60) *KdF-Stadt* was a suitable abbreviation.

Adolf Hitler received a preview of the definitive form of the Beetle-to-be when a one-tenth-scale model of the car was presented to him on his forty-ninth birthday, 20 April 1938. Porsche pointed out its features to a visibly delighted Führer as the tall, genial Bodo Lafferentz and other beaming aides looked on. (61) Three final prototypes of Porsche's design, at last showing the Beetle as we know it, were revealed for the first time on 26 May 1938 when the cornerstone of their factory was laid by Hitler before six hundred honored guests and seventy thousand spectators.)

The ceremony, on the north side of the canal, was adorned with swastikas in the spectacular and familiar panoply of Nazi pomp. Robert Ley, proudly introducing his leader, seized the day.

What has been started here — this factory and everything which will come of it — is basically and singularly your work, my Führer. This Volkswagen factory is one of your own favourite creations. We know how you thought of giving the German people a good but inexpensive motor vehicle even before you came to power and how you have even since imbued with new strength all the designers and others who laboured on this car! (62)



Another view of the handsome KdF-Wagen cabriolet built for ceremonial purposes before the war. No serious consideration was given at that time to the manufacture of such a model — that would have to wait until after the war.



Standing between Porsche, left, and Robert Ley, Adolf Hitler inspects the only KdF Type 60 cabriolet built before the war. He was driven in it from the cornerstone-laying ceremony by young Ferry Porsche, just visible behind Ley.

Adolf Hitler amply repaid Ley in his remarks: “This car shall carry the name of the organisation which works hardest to provide the broadest masses of our people with joy and, therefore, strength. It shall be called the KdF-Wagen!” This decision was not news to project insiders; Lafferentz had told them at the end of 1937 that Hitler had decided on this name. The Porsches senior and junior were shocked, however. They privately declared themselves as unhappy about a name that was at best meaningless in the crucial export markets. (63)

THE STRENGTH THROUGH JOY movement was anything but meaningless at home, especially to the people the DAF wanted to sign up as buyers. In 1938, ten million Germans would take part in one or another holiday trip or outing organized by the KdF. Hitler wanted them all to be on wheels, as he explained to the Fallersleben masses and the millions listening to his speech on the radio:



Standing next to Adolf Hitler, Ferdinand Porsche wears a trench coat at the cornerstone-laying ceremony on 26 May 1938 at Fallersleben. The robust figure of DAF leader Robert Ley is at right

When I came to power in 1933 I saw one problem that had to be tackled at once — the problem of motorization. In this sphere Germany was behind everyone else. The output of private cars in Germany had reached the laughable figure of 46,000 a year. And the first step toward putting an end to this was to do away with the idea that a motorcar is a luxury. What I want is not a car for 200,000 or 300,000 persons who can afford it, but a car which six million or seven million persons can afford. But could a German with 990 marks in his pocket consider splurging on a KdF-Wagen (RM 1,050 for the version with a sliding canvas roof) as soon as the production lines rolled, as they were expected to in 1939? At the cornerstone ceremony Bodo Lafferentz explained that it would not be as simple as that. Delivering a state-of-the-project review, he announced that a special savings plan for car purchasers would be launched. It was his brainchild.

A car had been created that was radical by the standards of its day. The means chosen to finance the project to build it could hardly have been more radical. The factory itself was radical by European standards. Appropriately, the purchasing arrangements were to be radical as well.

They were seen as not so bizarre by the members of the DAF, accustomed as they were to paying the KdF in advance for their holidays. Now they would do the same for their new car. And there would be no way around it; this was the only way a KdF-Wagen could be purchased.

Dr. Robert Ley explained the system in detail for the first time at a workers' rally in Cologne on 1 August 1938. "It is the Führer's will that within a

few years no less than six million Volkswagens will be on German roads," Ley declared. "In ten years' time there will be no working person in Germany who does not own a Volkswagen." Its factory, said Ley, would be "the materialization in stone and iron of the idea of classless education, settlement work, national health and the beauty of work." (64)

Initiated that August by Ley, Lafferentz's layaway savings scheme was viewed by the DAF as an important means of securing the viability of its new factory, which soon would be birthing Beetles by the hundreds of thousands. They wanted to have purchasers signed up and standing by in an orderly manner to take delivery of their dark blue autos. By committing them to a savings scheme well in advance, meticulously organized and documented in the bureaucratic style of the Third Reich, the DAF aimed to achieve that goal.

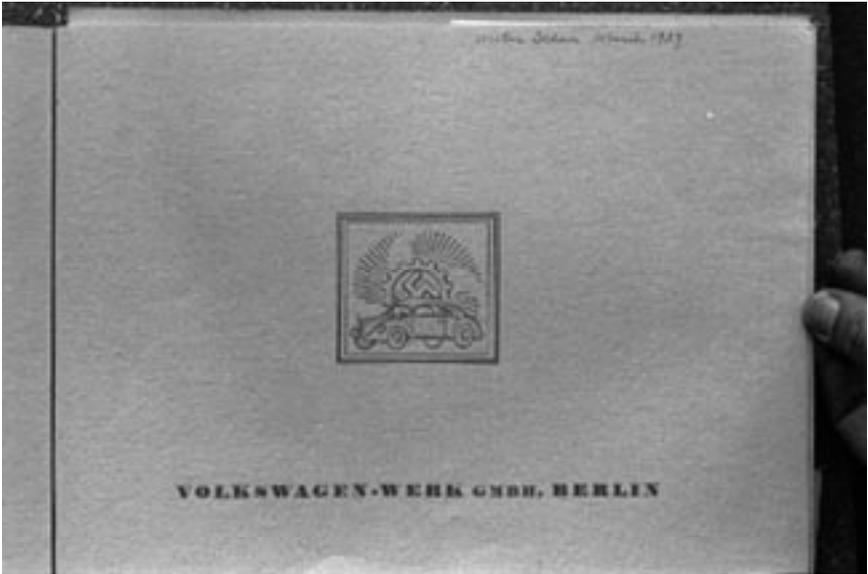
The procedures were spelled out in detail. For twenty pfennigs someone who wanted to drive rather than walk could buy a handsome, richly illustrated brochure edited by Dr. Eberhard Moos; printed in Stuttgart in press runs of half a million, the brochure informed readers about the KdF-Wagen in excruciating detail and at laudatory length. An application form was stapled at its center which, completed and submitted with one mark, gave the buyer his first savings book and committed him to carry on saving until he had laid the purchase price away.

Savers were committed to buy, stick in their book, and self-cancel at least one red or green five-mark KdF-Wagen stamp each week; in special cases this could be relaxed to monthly. Savers could buy more stamps if they wanted to. Extra spaces were provided in each book to save for the convertible model or for the delivery charges to their home district if they didn't want to pick up their car from the KdF-Stadt.

When the saver turned in his third book, representing a total saved of at least 750 marks, he was sent a postcard which assigned to him a specific numbered place in the delivery queue for the cars that would be allocated to his district or *Gau*. Allocations would be in proportion to the number of signed-up savers in each *Gau*. When he completed the last books in the series he could expect to receive his brand-new Beetle. Withdrawal from the scheme was only permitted in special cases and then with an "administrative" deduction of 20 percent of the amount saved.

Participation in the scheme was not forced, as has sometimes been suggested, but was actively promoted and encouraged. The DAF presses rolled with promotional brochures and flyers, including a handsome booklet with transparent overlays that allowed the reader to "dismantle" a KdF-Wagen and view its components from above and below.

Details of the car were released to the press for the 1939 Berlin Auto Show, where two cars and a chassis were on display. Publicity photos showed components of the car and the plant under construction. They were provid-



Promotional materials for marketing the KdF-Wagen were produced to a high standard. This was the cover of the brochure produced for the 1939 Berlin Auto Show.

ed to the press on the condition that they send copies of their articles to the VW offices at Taubertstrasse 4 in Berlin-Grunewald.

Linked with the opening of the show in Berlin was the release of a new set of postage stamps. The original Benz and Daimler cars were on the six pfennig stamp, the Auto-Union and Mercedes-Benz racing cars on the seventeen pfennig, and the KdF-Wagen, whooshing along an Autobahn, on the twenty-five-pfennig stamp. Germany's automotive credentials were proudly displayed.

Aggressive advertising promoted the savings scheme. Employers were encouraged to credit their workers with stamps or books according to their length of service. A first savings book, it was suggested, would be just the thing to give as a present for Christmas. To encourage this a special KdF-Wagen display was organized for the Christmas fair in Berlin.

Entrepreneurs were quick to seize the KdF-Wagen opportunity. One created a board game that took the players through the pleasures of acquiring and running a KdF-Wagen. Surrounded by illustrations of the factory, Porsche's development center, and the KdF-Stadt were the many stages of life with the VW. The factory-authorized game progressed from the decision to buy through a frenzy of stamp-saving to passing the driving test, collecting the car from the factory, and many miles of joyful motoring that ended, tired but happy, at home. (65)

Outside the doors of the 1939 Berlin Show the preproduction prototypes were ready for press demonstrations. Afterward these precious cars were kept constantly on the move to be admired by the public and cinema-goers in the company of the Nazi great and near-great. Their busy schedule in the spring of 1939 included appearances at the Eifelrennen on the Nürburgring (three cars), the Breslau Fair (one car), the Gau and Culture Conference in Stettin (one car), and the Ufa film studios in Berlin (two cars in May, two in June, and then ten cars for a big film project in July).

The campaign's initial impact was gratifying. By the end of 1938, 170,000 savers had signed up. Rates continued to climb; by the end of 1939 the number of savers in the KdF car-buying plan was 275,000. They had already put 110 million marks into the special kitty that would fund their purchases.

Promote though they might, however — and the DAF continued to push the benefit of saving right through the war — the rate of new signings fell sharply in 1940 and the subsequent years. It crept gradually to a peak of 336,668 savers in 1944; by 1945 savers had invested 275 million marks in the scheme. Yet this was far short of the number of Beetle buyers needed to support the huge volumes of production expected for the plant. Optimists at the KdF headquarters prophesied that signing-on rates would soar as soon as the big works began spewing out its dark blue cars.

Analysis of the savers showed that the noble laborers so beloved of Ley and Hitler were dramatically underrepresented in the scheme: only 5 percent could be so described. Whereas their gross weekly income was in the range of seventeen to twenty-six marks, in which five marks made quite a dent, most savers were middle-class Germans earning eighty to ninety marks weekly. And one-third of them already owned a car! Worryingly, only one in four of the workers in the VW plant itself had signed up to save for the car he hoped to build. (66) Here was justification for the concerns of the German automakers that the KdF-Wagen would make inroads into their markets. The savers' composition also justified the original suggestion by Franz Josef Popp that only members of the DAF should be eligible to buy the cars, a recommendation that was meant to limit the damage to Germany's other car producers. Simple economics indicated, however, that the number of those enrolled would have been far lower if this restriction had been imposed.

Following the lines advanced by Popp there were no dealers as such; the Gau offices of the DAF would handle sales in order to remove the dealer's overhead from the cost of distribution. Parts would be sold through existing independent retail outlets. By 1940, 223 contract workshops or service centers were signed up across the country; an additional 1,000 affiliated workshops were anticipated. Also, an agreement in principle had been obtained by Bodo Lafferentz from at least one carmaker, Daimler-Benz, to welcome KdF-Wagen owners to its dealers for service. (67)

The KdF planners hoped to minimize workshop visits and encourage the do-it-yourself approach to maintenance by designing and printing a magnificently detailed and illustrated owner's manual. In its center pages a series of callout lines from the parts shown in a cutaway drawing of the Beetle led to thumb cuts around all three sides of both pages that guided the owner directly to the section of the manual he needed.

ON 6 SEPTEMBER 1938 THE organization that had been creating the Volkswagen car and factory, known since May 1937 as GEZUVOR (*Gesellschaft zur Vorbereitung des Volkswagens mbH*), was transformed into the Volkswagenwerk GmbH with its headquarters in Berlin. This was a logical but less evocative name than GEZUVOR, which in German implied "go ahead!"

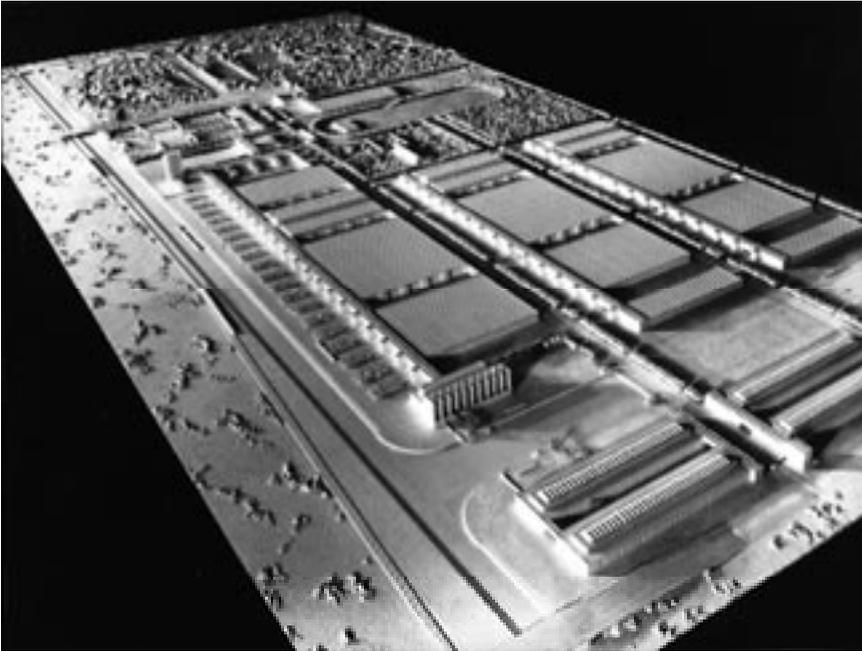
Hans Kern, Porsche's new business manager, moved the company into spacious custom-built premises in Zuffenhausen, a suburb north of Stuttgart. Porsche's office had expanded dramatically to meet its new responsibilities. In 1938 Porsche had a turnover of RM 1.6 million and employed 72 engineers and 104 skilled workers; by 1940 those figures would increase to 117 and 174 respectively.

In September 1938, at a meeting of the East Prussian Gau in Königsberg, Robert Ley announced that production of the first series of 20,000 cars would start in a year's time. Then in 1940, 100,000 would be produced, twice as many in 1941, and then up to 450,000 per year during the first stage of the plant's development, with a workforce of 17,500 on two shifts. Before the year was out a plan was also on the table to gear up to produce 450,000 Beetles per year as early as 1940.

That was to be only the beginning. The huge, modern plant extending four-fifths of a mile along the Mittelland Canal was designed to be expanded in stages so that ultimately 30,000 workers could build 800,000 to one million cars yearly. Thus the KdF-Stadt was planned to expand to accommodate those workers and their families, 90,000 souls in all. As soon as the savers received their cars, more than half the Beetles produced would be exported to bring valuable currencies into the New Germany.

These were awesome volumes by the standards of the day. In the mid-1930s Ford was the world's leading auto manufacturer, producing 1.3 million cars per year. Chevrolet was next in output with one million, followed by Plymouth with 500,000, Dodge with 300,000, and Oldsmobile with 200,000 cars per year. GM's Opel was by a wide margin Germany's volume leader with its output of 140,580 vehicles in 1938, 82,000 of them private cars. The mammoth project at Fallersleben would dwarf these digits.

ON 7 JULY 1939 A MERCEDES-BENZ cortege motored west from Berlin and drew up at the gates of the plant-to-be at Fallersleben. Adolf Hitler



A major exhibit at the 1938 Berlin Auto Show was a magnificent model of the Volkswagen factory of the future. The model showed the works after the two expansions that would increase its capacity to 1.5 million cars per year.

and his retinue were en route to the Berghof for the summer but on his way the Führer wanted to view progress at the site which, according to Ferry Porsche, “resembled nothing so much as the world’s biggest ant heap” (68) with its earthworks and teaming Italian labor force.

The four huge halls were completed. Machinery was being installed in the tool-and-die shop and the huge presses were in place. The Führer was driven through the vast buildings in his open-topped Mercedes. In each hall, Porsche and his staff would gather around the swastika-flagged Mercedes to explain what production process would take place there. After a tour of the nearly completed power plant, the parade of cars drove up to [a hillside] and looked down on the sprawling factory below. (69)

Little more than a month later, on 16 August, the huge plant came to life for the first time when Ferdinand Porsche personally turned a valve the size of a massive steering wheel to initiate power and heat generation by one of the big coal-fed Borsig turbines. Job One, in modern parlance, was expected to be built in October and the goal was production of ten thousand cars by year’s end. But a number of specialized machines ordered from America were not yet in place; mid-1940 looked more likely for Job One..



Ferdinand Porsche checks the gauges as he turns the big handwheel that brings the first power-generating Borsig turbine into operation at Fallersleben. The factory is almost ready. But when would it produce automobiles?

It could have happened that way. Hitler wanted the plant and its car to fulfill his promises. But he had conflicting priorities. Above all he wanted more land to the east for his people. In March 1938 he had annexed Austria; this was celebrated on the cornerstone he had laid at Fallersleben. The Sudeten region of Czechoslovakia had followed in September; March 1939 saw the rest of the Czech nation absorbed into Greater Germany.

In May 1939 Hitler's Germany allied in a Pact of Steel with Mussolini's Italy. Hitler challenged the world with his brazen march into Poland on the first of September of 1939; the world responded two days later with a declaration of a state of war by Britain, followed by France. KdF-Wagen production would have to wait while Adolf Hitler and his troops dealt with these inconveniences.