

# Mobile Tradition live



## The long route taken by the BMW 1600 – the start of a success story



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- 44 The history of BMW off-road motorcycle racing. Rudolf Schleicher on a BMW R 37 wins the legendary Six Days in 1926, with numerous triumphs to follow.



# Radically thrilling.

## The new BMW Z4 M Roadster.

Its 252 kW (343 hp), in-line six-cylinder high-revolution engine provides the power, while 6 gears let you open it up when the urge hits. Combined fuel consumption: 12.1 l/100 km, urban: 18.2 l/100 km, extra urban: 8.6 l/100 km, combined CO<sub>2</sub> emissions: 292 g/km



The new  
BMW Z4 M Roadster



Sheer  
Driving Pleasure



Dear Friends of the BMW Group,

Longstanding readers among you will have instantly noticed that Mobile Tradition live has been given a thorough make-over. After three successful years in which our magazine has steadily grown in size and popularity, we felt it was time to make a fresh impact on the design front as well. It has prompted us to present the many exciting stories from BMW's past in an even more attractive and transparent layout. In this issue, we again provide a wealth of interesting facts and background stories from the history of the BMW brand and its products: the development of its roadsters, for example, or the influence of telemetry in Formula One and the triumphs of BMW motorcycles off the beaten track – all topics that are still of pivotal importance to BMW today, in the year 2006. To meet the growing interest in the MINI brand, we will also be issuing a publication on that theme. I take particular delight in presenting you with this new-look issue, marking the latest evolution of a successful product by BMW Mobile Tradition.

Read and enjoy!

**Holger Lapp**

Director BMW Mobile Tradition

**Below |** Pure roadster emotion: with the BMW Z8 the company introduced an absolute high-end sports car in 1999. Its V8 engine delivers 400 bhp to take the car from standstill to 100 km/h in under five seconds. In its design, the Z8 adopted styling cues from the legendary BMW 507.





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**Sheerfascination I** An open top, a seat just above the asphalt and masses of power under the stretched bonnet: no other car embodies the essence of motor-ing more than BMW's roadsters. With the latest Z4 and Z4 M, BMW perpetuates a tradition that began with the launch of the very first BMW car in 1929.

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**BMW Tower: a "four-cylinder" for BMW and Munich I** It wasn't designed merely as the new administrative building of the BMW enterprise, but as a landmark that would be known beyond the bounds of the city. The BMW Tower built by Karl Schwanzer in 1973 fully met this brief. To this day, the "Four-Cylinder" is famous the world over as the unmistakable trademark of BMW.





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#### From Formula One to production cars |

Today millions of data are transmitted from a Formula One race car to the pits and vice-versa. Telemetry serves to monitor the moving car and to improve its driving characteristics. BMW Motorsport was the first to develop and implement this means of data transfer. Now the technology is also benefiting roadgoing customers.

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**The architect of recovery |** In Dr Karl-Heinz Sonne, the BMW company had its first bona fide chief executive after the Second World War. Despite his brief term of office from 1962 to 1965, Sonne instigated a series of changes which had an enduring impact on the company.



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#### The 02 Series is born |

Munich's opera house formed a splendid backdrop for the presentation of the BMW 1600 in 1966. This model marked the inception of the 02 Series, a range of cars that would have a defining impact on the company and move it forward in the following decade. But it was to be several years and numerous boardroom meetings before the BMW 1600 was given the green light.

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#### Off the beaten track: BMW off-road competition up to 1939 |

In the 1920s, off-road sporting contests increasingly gained in significance. On an R 37, BMW engineer Rudolf Schleicher claimed his first victories in the International Six Days. In the years to 1939, BMW dominated the off-road scene with systematically evolved models such as the R 16 and the R 4. The BMW racing bikers of this era, such as Ernst Henne and Georg Meier, became motor sport legends.



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## BMW Group Mobile Tradition at Techno Classica 2006

**Essen.** More than 12,000 exhibitors will present their polished gems from the motoring past for the 18th time at the world's biggest classic fair that takes place from 6 to 9 April 2006. Among the main crowd-pullers for years now, BMW Group Mobile Tradition will be attending with its BMW and MINI brands in Hall 12 of the Essen Exhibition Centre. At this year's show, the primary focus of BMW Group Mobile Tradition will be on the roadster theme. Its media campaign "Sheer fascination. BMW roadsters 1929 – 2006" accompanies the launch of the new BMW Z4 Roadster and the BMW Z4 M Roadster. It is a theme with a long history at BMW: the company has kept faith with the roadster concept for almost eight decades now, under the motto that to drive a roadster is to drive for driving's sake. Roadstering reflects the thrilling union of driver, vehicle and road. It is the sheer fascination with this vehicle concept that lends the roadster dream ever-new forms. It is this feeling that BMW aims to convey on its stand. Lined up for visitors to admire will be the racing legend of the 1930s, the BMW 328, together with the BMW 507, the BMW Z3 and Z4, and the Z8 as the incarnation of the aesthetically consummate sports car.

Delivering a feast for the eyes of all classic car fans will be the BMW coupés. With the introduction of the new BMW 3 Series Coupé in the summer of 2006, this tradition of elegance finds its successful continuation. On show will be the elegant BMW 327, the stylistically accomplished BMW 503 Coupé and the exclusive BMW 3200 CS. Also present will be the BMW 3.0 CSi, guaranteed to delight visitors to the show with its fusion of elegance and sporting prowess. A BMW 635 CSi will represent the coupés of the 6 Series.

The so-called "Dark Room" will present highlights of BMW motor sport and the brand's engine competence, ranging from the aero-engine era to motorcycle and touring car racing and on to the latest Formula One involvement of the BMW Sauber F1 Team. For devotees of two wheels, part of the stand will be transformed into a desert landscape showcasing off-road models and milestones of motorcycle design.



Above | The BMW Group Mobile Tradition stand at the 2005 Techno Classica. In the foreground, the Veritas RS.

Below | The movie poster of THE MINI STORY at the 2006 Techno Classica will cover more than 25 m<sup>2</sup> in area.

From the "Dark Room" visitors reach a section of the hall with a predominantly black colour scheme: here MINI invites you on a tour of its eventful history. With "THE MINI STORY" presented at Techno Classica, BMW Group Mobile Tradition launches an innovative and exciting media campaign on the history of this much-loved automobile. Cheeky, individualistic and unconventional, the campaign reflects the car itself. THE MINI STORY features heroes, rogues, time machines, car chases and beautiful women. Also marking its world premiere will be one of the protagonists of the pilot film: the MINI Wildgoose camper. But that's all we're giving away at this stage.

In addition to exhibits from the Eisenach vehicle museum, there will also be cars from the BMW, Glas, Rolls-Royce and MINI clubs, along with insights into club life. As ever, BMW Group Mobile Tradition presents the history and heritage of automotive manufacturing as a part of cultural history as a whole, offering visitors more than just exhibition items.



+++ Preview: Concorso d'Eleganza Villa d'Este 2006 +++ Preview: Concorso d'Eleganza Villa d'Este 2006 +++



Left | Four-wheeled gem against an enchanting backdrop.

Below | Beauty and glamour at the Concorso d'Eleganza: the classic cars are exhibited in front of Villa d'Este and Villa Erba.

## Concorso d'Eleganza Villa d'Este 2006: an entire world of four-wheeled dreams

**Cernobbio.** The Concorso d'Eleganza Villa d'Este again presents a highlight of 2006 for fans of cars from bygone eras and devotees of bold contemporary design. This beauty contest for classic automobiles takes place for the eighth time under the patronage of the BMW Group from 21 to 23 April. Against the magnificent backdrop of the Grand Hotel Villa d'Este in Cernobbio on the shores of Lake Como, classics encounter futuristic design. Rubbing shoulders with elegant vehicles spanning the period from 1920 to 1970 will be contemporary concept cars and prototypes.

Holger Lapp, Director of BMW Group Mobile Tradition and President of the Concorso d'Eleganza Villa d'Este, is a committed supporter of the event: "The Concorso d'Eleganza has for some years now ranked as the leading event of its kind in Europe. For 2006 we again anticipate an exceptional range of classic models and also look forward to seeing some spectacular concept cars." This year BMW Group Mobile Tradition will turn a sharp focus on its own company's roadster history. A special exhibition will line up the stunning range of BMW roadsters, featuring such gems as the BMW 319/1 and the BMW 328 anniversary model, which began its triumphant conquest of the world's race tracks 70 years ago. Also on show will be the BMW 507 and the Z series roadsters all the way to the latest BMW Z4. On the concept car front, the BMW Group will be represented by the MINI Concept Geneva and a design study for the BMW Z4 Coupé.

Further highlights among the 50 classics registered for the event will be a Maserati Boomerang of 1971 designed by Giorgetto Giugiaro and a Maserati A6G-2000 from the year 1954. Another newcomer to the Concorso d'Eleganza Villa d'Este will be a 1962-vintage Jaguar E-Type, while the Bugatti Type 57 Aravis Cabriolet Gangloff is also guaranteed to turn heads. This model, dating back to 1939, was always a welcome guest at the concours d'elegances of the 1930s and frequently drove off with prizes in its boot.

This year's most attractive models will again be honoured with a range of prizes: the Coppa d'Oro di Villa d'Este, the Trofeo BMW Group and the Concorso d'Eleganza Villa d'Este Design Award for Concept Cars. Urs Paul Ramseier, Selecting Adviser to the Con-

corso d'Eleganza Villa d'Este 2006, looks ahead to the event with optimism: "We are all working hard to present the art of carmaking at Lake Como again in 2006, as reflected in the wonderful designs by the stylists."

Several thousand guests are expected on Sunday, 23 April, when – as every year – the gates open at 9.30 in the morning to give the general public an opportunity to participate in the Concorso d'Eleganza Villa d'Este. The vehicles will be on show in the grounds of the adjacent Villa Erba. Jean-Marc Droulers, President of Villa d'Este SpA, looks back on the great tradition of the Concorso: "Since 1929 the Hotel Villa d'Este has provided the setting for the Concorso d'Eleganza – the most traditional concours d'elegance in existence. On the last weekend of April there is no more beautiful place in the world to savour Italian savoir-vivre and automotive culture."



+++ Preview: Mille Miglia 2006 +++ Preview: Le Mans 2006 +++ Preview: Mille Miglia 2006 +++



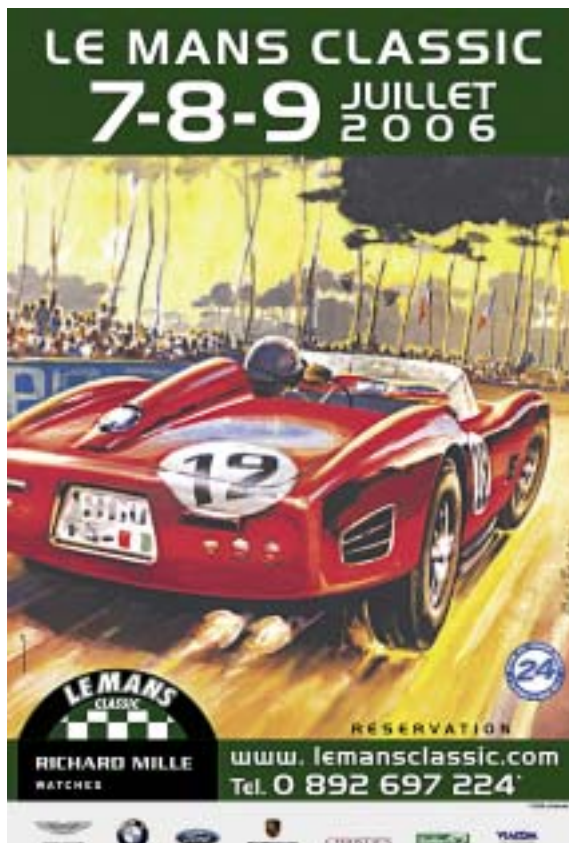
Left | BMW Group Mobile Tradition will be fielding ten cars in the 2006 Mille Miglia.

## Mille Miglia 2006: 1,000 miles across Italy

At the heart of the Mille Miglia Storica lie an enthusiasm for beautiful classics and a keen sporting ambition. By tradition, the event starts from the Piazza della Vittoria in Brescia on 11 May. 373 classic cars have signed up for the 24th edition of this legendary road race. As the name indicates, the course runs for 1,000 miles through northern Italy: from Brescia to Ferrara and on to Rome, and then back again via Florence and Bologna to the starting point. Thousands of spectators will again be lining the route through towns, small villages and mountainous stretches, watching the veteran cars struggle across the Appennines.

Lining up for BMW Group Mobile Tradition in 2006 will be ten teams

with five BMW 328s, three BMW 328 Mille Miglia models and two BMW 507s. Next to seven-times Mille Miglia winner Giuliano Cané, several high-ranking BMW executives will be taking part, including BMW Group Board Member Professor Burkhard Göschel, Holger Lapp, Director of BMW Group Mobile Tradition, Marco Saltalamachia, head of BMW Italy, and Thomas Purves, CEO of BMW North America. Alessandro Zanardi will also be participating in a modified BMW 507. The Italian racing driver, who lost both legs in an accident during a CART series, has been racing again since 2004, also for BMW in the World Touring Car Championship. Only cars that have run in the Mille Miglia at least once between 1927 and 1957 are eligible to enter.



## Le Mans 2006: BMW at the start

After 4,968 kilometres, BMW won its first Le Mans 24 Hour Race in 1999. Behind the wheel of the BMW V12 LMR were Pierluigi Martini, Yannick Dalmas and Joachim Winkelhock.

At this year's race, to be held from 7 to 9 July, BMW Group Mobile Tradition will be represented by a number of cars and drivers. They include Prince Leopold of Bavaria, who will take to the track in a BMW M1 licensed for this circuit for the first time, and ex-Formula One driver Marc Surer steering a BMW 320i.

Vintage fans will be delighted to see the legendary BMW 328 Mille Miglia Coupé being fielded by BMW Group Mobile Tradition. The third edition of the Le Mans Classic, like the original event in 1923, takes place on the tradition-stepped 13.65-kilometre Bugatti Circuit. Divided into six groups according to model year, almost 400

cars will be battling against each other for 24 hours.

There will be plenty happening at the trackside as well. As in the 2004 event, Christie's will be auctioning classic cars. Car clubs from around the world will present their collectors' items and more than 100 exhibitors will be offering accessories and rare items from the motoring past at the Automobilia. BMW Group Mobile Tradition will be present with a "Dark Room" showing around 90 years of BMW motor racing history. From Zeno Diemer's high-altitude flight to the record-breaking rides of Ernst Jakob Henne, from triumphs in the Paris-Dakar Rally and Le Mans all the way to the latest Formula One racer of BMW Sauber – BMW will employ picture and film material as well as original parts and exhibits to bring its racing history alive once again in the evocative surroundings of Le Mans.



+++ New publication: BMW Perspectives +++ New publication: BMW Perspectives +++



Above | Civilians working in the BMW aero-engine factory during the Second World War.

## BMW Perspectives – the scholarly series of the BMW company archive

Since autumn 2005 the range of publications offered by BMW Group Mobile Tradition has been extended by BMW Perspectives, a new book series with a distinctive profile. Whereas the existing publications Mobile Tradition live and the volumes from the Dimensions, Profiles and Portraits series present their themes in a journalistic mould with plenty of illustrations and photographs, the books in the BMW Perspectives series take a methodical, theoretically rooted approach to their subjects and aim for a level of scholarship. BMW Group Mobile Tradition has teamed up with Munich-based academic publishers R. Oldenbourg in this project.

The BMW Perspectives series will initially comprise historical dissertations that have been commissioned by BMW's Historical Archive. But the series will be open to any academic work treating subjects that are directly or indirectly connected with the BMW company, brand or product history. Responsible for selecting the works for publication in this series is the BMW Historical Archive.

The first volumes of BMW Perspectives deal with themes the public have been following with keen interest over recent years. In a joint project, MTU Aeroengines GmbH, as the legal successor of BMW Flugmotorenbau GmbH, and the BMW Group have had the history of the Bayerische Motoren Werke during the "Third Reich" written up in two dissertations. For this project, three historians agreed to form an academic advisory committee. As experts on various aspects of the overall subject matter, they are lending expert critical support to the two authors as they write their dissertations and will take responsibility for quality assurance. Neither MTU Aeroengines nor the BMW Group have provided any input into the results of the research.

The recently published first volume of BMW Perspectives by Constanze Werner is entitled *Kriegswirtschaft und Zwangsarbeit bei BMW* (Wartime economy and forced labour at BMW). The main part of the book deals with the history of aircraft engine production at BMW during the Second World War, to which an increasing number of foreign and German workers were forced to contribute. In her research, Constanze Werner not only evaluates a wide range of written sources assembled from numerous archives, but has also been able to include interviews she had with former forced labourers from Poland, Ukraine, Greece and France. Some of the interviews are reproduced in the appendix to the book.

The second volume of BMW Perspectives will turn the spotlight on BMW during the early years of the "Third Reich" (1933 to 1939). Here author Till Lorenzen examines whether and, if so, how the company's scope of activity changed and traces BMW's path from an advanced producer of aircraft engines, motorcycles and cars to a manufacturer of armaments in the early 1940s.

Constanze Werner's book is available through booksellers at € 39.80. The second volume by Till Lorenzen is due to be published in winter 2006/2007.



+++ New acquisition in the Mobile Tradition collection +++ New acquisition in the Mobile Tradition collection +++



Above | The BMW 326 Sport Cabriolet in 2003 shortly after completion of a long, drawn-out restoration process.

## Attractive rarity: a BMW with Gläser body

Kai Jacobsen

**Gläser bodies from Dresden.** During Dresden's period of industrialisation, Heinrich Gläser set up a workshop in 1864 to build carriages and horse-drawn sleighs. With this he laid the foundation stone for a company whose products would go on to enjoy worldwide fame.

Commissions from the Royal Stables in Dresden and from the Royal Supreme Stable Office meant that Heinrich Gläser OHG was quickly granted a royal warrant to become the "Royal Court Carriage Factory". The bodysells delivered from other workshops, such as that of Friedrich August Emil Heuer of Radeberg, were upholstered and painted by Gläser. Heuer's marriage in 1885 to Gläser's daughter Bertha put business relations on a closer and more familiar footing. In 1898 Heuer became a partner of the Gläser company. Heinrich Gläser, who died in 1902, did not live to see the production of the first automobile body, a saloon mounted on a Mercedes chassis. This "detachable saloon" (which would today be called a hardtop) subsequently became a speciality of the company.

Through various patents, which included car top designs and window lift mechanisms, Gläser emerged in the 1920s as one of the leading manufacturers of convertible bodies. The driving force behind technical developments and the design of the bodies was Georg Heuer, the son of the company owner.

In 1926 the firm struck a business deal with the German agency of General Motors, which led to numerous Buicks, Cadillacs and Chevrolets receiving Gläser bodies. After Opel became part of the General Motors organisation in 1929, Adam Opel AG became the

number one client of the Gläser business. Other companies also availed themselves of the craftsmanship skills of Gläser: up until 1940, Gläserkarosserie GmbH (its name from 1933) provided cabriolet bodies for Horch, Wanderer, Audi, Maybach, Mercedes-Benz, Ford, Stoewer, Hanomag, Austro-Daimler and Steyr. Gläser also turned out elaborate and attractive one-offs, so-called "model bodies". To ensure that they were immediately recognisable as such, they received a small additional badge with this designation that was attached to the front wings below the "Gläser Karosserie Dresden" emblem. For BMW the company offered stylish cabriolets based on the BMW 303 without the landau bars typical of the time, as well as three-seater sports cabriolets mounted on the BMW 326 chassis. Only a few examples of these were produced. In 1945, Erich Heuer relocated part of the tooling and machinery first to Neustadt an der Aisch (north Bavaria), and soon after that to Ullersricht near Weiden (Upper Palatinate). The company now produced accessories for camera and cinematic equipment. Only occasionally were car bodies built, with the largest commission coming from Porsche in 1950/51. For economic reasons, Heuer was forced to close down his business at the end of 1952.

After the war, the business premises of Gläserkarosserie GmbH in Dresden were again used for the manufacture of car bodies under the new name of VEB Karosseriewerk Dresden (KWD). Work began on building bodies for the saloon and cabriolet of the IFA F 8, the former DKW F8 of prewar days. There followed the IFA F 8 Luxury Cabriolet, IFA F 9 Cabriolet, EMW 327/2 Cabriolet and 327/3 Coupé (which was largely identical with the prewar BMW 327),

+++ New acquisition in the Mobile Tradition collection +++ New acquisition in the Mobile Tradition collection +++



Left | The original GDR vehicle registration document of October 1957 showing three different owners up to 1970.

the AWZ P 70 Zwickau Saloon, Estate Car and Coupé launched in spring of 1957, the Sachsenring P 240 Cabriolet and Estate Car, the Wartburg 311/2 Cabriolet, 311/4 Police Patrol Car, 311/5 Camping Saloon and 131/3 Sports Car with a removable coupé top.

**BMW 326 Sports Cabriolet Gläser.** The BMW 326, available direct from the factory between 1936 and 1941 as a four-door saloon and a two or four-door cabriolet, became the most successful BMW car of the prewar era. It was powered by BMW's first six-cylinder engine with a displacement of two litres. In its overall design, the 50 horsepower tourer with a top speed of around 115 km/h was on the comfortable rather than the sporty side.

While the model 326 production cabriolets received their bodies from the Autenrieth company, customers also turned to numerous well-known coachbuilders of the time, such as Drauz, Weinberger, Reutter, Erdmann & Rossi, Vereinigte Werkstätten and Gläser, for special superstructures. One of these rare vehicles with a Gläser body joined the BMW Mobile Tradition collection in summer 2004. On 26 January 1938, the primed BMW 326 chassis bearing the number 82466 was delivered to BMW dealer Dr Brenner in Berlin. From there it made its way to Gläserkarosserie GmbH in Dresden, where it received a body with a sweeping rear. The design featured a front seat bench and a jump seat installed at right angles behind it. When not being used, this third seat could be folded up to provide a flat stowage area. It was also possible to place over it an

aluminium cover in the colour of the car to lend the entire vehicle an added touch of elegance.

Today no documents survive to indicate who took delivery of the BMW 326 Sports Cabriolet after its completion. Almost 20 years later the scent was finally picked up again. The original East German vehicle registration document shows that this rare car was licensed to master baker Richard Protz in Berlin-Pankow on 22 November 1957. In July 1965 the original engine had to be replaced, as recorded in the vehicle document along with the engine number. It wasn't until the end of November 1968 that Protz and the BMW parted company when he sold it to Horst Voss of Berlin-Friedrichshain. On 29 April 1970, the name of a new owner appeared in the vehicle document: Manfred Schultz, engineer, from Altranft near Bad Freienwalde/Oder. He temporarily took the car off the road on 22 December 1970. In April 1973, Herr Schultz had the engine overhauled and replaced the pistons, with the cylinder head being overhauled two years later. According to the purchase contract of 25 March 1980, the Gläser BMW changed hands once more and went to Bernd-Dieter Jäger in Birkenwerder near Oranienburg. Presumably because the cost of restoring the bodywork and other components was too high, he sold the car in 1982 to Bernd Hoffmann in the neighbouring town of Wensickendorf. Shortly afterwards, Hoffmann began restoration work, which proved a difficult task on account of the special superstructure and a number of special components.



Right | The two-tone BMW 326 Sports Cabriolet in winter, with the top taken down for this photo.



**90 years ago |** Founding of the company

When Bayerische Flugzeugwerke AG (BFW) was founded on 7 March 1916 as part of a government initiative, nobody foresaw that a world-famous automobile and motorcycle company would be celebrating its 90th birthday on the same date ninety years later. The BFW, based in north Munich, produced aircraft for the German military forces during the First World War. After the war, the small company survived the initial months and years by manufacturing wooden furniture and motorcycles.

Not far from the Bayerische Flugzeugwerke AG, the Bayerische Motorenwerke AG had set up new production plants in August 1918. At

the end of the First World War, the engine constructors began producing train brakes under licence. In June 1922, the Austro-Italian financier and speculator Camillo Castiglioni bought up the engine plant complete with patents, drawings, machinery and staff. Castiglioni also acquired the BMW company name and the blue and white emblem that had won a strong reputation in the final months of the war, and transferred everything to the BFW. In the months that followed, engine construction moved to the factory site of the “new” company. Here it was that BMW AG resumed its production of aircraft engines and, from 1923 on, turned out its first motorcycles.

Above | BFW manufactures aircraft on the site of the former Otto-Werke from 1916 to 1918.

Right | Production building and aircraft of the Gustav Otto Flugmaschinenfabrik.



## 30 years ago | Launch of the BMW 6 Series

The hotly anticipated BMW 6 Series celebrated its début at the Geneva Motor Show in March 1976. Following the successful launch of the BMW 5 Series and 3 Series in 1972 and 1975 respectively, the time had come for BMW to replace its large coupés from the BMW 2.5 CS to the BMW 3.0 CSL. In terms of ride comfort and equipment levels, the BMW 630 CS and 633 CSi models represented a clear advance on their forerunners. Power-assisted hydraulic steering dispensed its services according to the driver's needs: when parking, full power assistance was available, while driving at speed along B-roads or motorways reduced the effect so that – in the words of the press release of the time – “the car lies as securely on the road as the door falls sonorously into its lock”. One particular technical highlight was the Check Control feature. At the press of a button, this provided all the relevant vehicle data such as the level of engine oil, cooling water and washing water, as well as brake pad wear and the functioning of the brake lights and tail lights. For all its comfort, the BMW 6 Series also paid homage to its sporting roots: with an engine output of up to 286 bhp, this luxury coupé accelerated like a bat out of hell.



Above | Power and majesty: the BMW 630 CS/633 CSi of 1976 with a 2,986/3,210 cc engine.

Below | Desert sand and sun place extreme demands on all participants. Hubert Auriol claims the first Dakar victory for BMW on a BMW GS 80.

## 25 years ago | BMW wins its first Paris-Dakar Rally



Regarded as the world's most challenging rally, the Paris-Dakar – first staged in 1979 – covers a distance of 9,000 kilometres, only a third of which is on made-roads. Around 6,000 kilometres lead through endless desert expanses, across stones and debris, and through heat and dust.

For some it was hell, but for BMW it was the ideal platform on which to demonstrate the off-road qualities of its R 80 G/S touring enduro. After being forced to retire from the event in the first two years, BMW France took a more professional approach to its Dakar involvement in 1981 and had the motorcycles for its three riders Auriol, Neimer and Fenouil assembled by off-road specialists HPN. That year the Dakar proved even more challenging than in the previous two years, with only 25 out of 101 starters making it to the finish. Thanks to a perfectly prepared bike, his own riding skills and that extra bit of good luck, Hubert Auriol claimed the first victory for BMW – an achievement he managed to repeat on his BMW in 1983.

# BMW – The company from 1916 to 2006

What has defined BMW over the last 90 years? Which routes has the company taken? What kind of products has it developed? What has it manufactured and sold? And who were the key players? These and other questions are among those posed – and answered – by Manfred Grunert and Dr Florian Triebel, the authors of the latest BMW Dimensions volume, *Das Unternehmen BMW von 1916 bis 2006*.

Both of them work in the BMW Historical Archive. They have divided BMW's history up into ten themes treated in separate chapters and covering the beginnings of the company to the year 2006. The ten subject areas are: general company development, personnel, research and development, production, engines, motorcycles, automobiles, motor sport, sales and advertising. The book points up the developments, continuities and ruptures within these focal areas of BMW history. Several hundred cross-references interlink

the subjects beyond the confines of their chapters, allowing for several possible approaches to the book. Three appendices complement the material covered in the chapters: all BMW Board Members are presented in brief profiles, key company data from 1918 to 2005 are listed, and there is an overview of BMW's aero-engines, motorcycles and cars. This book is a must-read for anyone interested in the BMW brand and its history. The following pages afford an initial insight into the ten chapters that make up this 600-page tome.

## 01 | Company

As a company, BMW underwent several far-reaching transformations. Founded as an aircraft engine manufacturer, it expanded in the 1920s to embrace motorcycles and cars and became a fully-fledged mobility enterprise. During the wartime economy of the Second World War, aircraft engines once again took centre stage. The company's restart after the war initially failed, but from the 1960s onwards a successful revival was achieved with sporty cars and motorcycles. The success of that approach has endured to this day.



Above | The BMW factory entrance and administrative building in the mid-1920s.

Right | Employees in the open-plan office of the recently finished BMW Tower in 1973.



## 02 | Personnel

From the beginning, the BMW company capitalised on its well-trained employees. The technical expertise of its constructors, the quality craftsmanship of its skilled workers and the know-how of the administrative and sales departments helped the company to succeed – and more than once it was the commitment of its employees that helped the company through difficult times.

### 03 | Research and development

Throughout the history of BMW, the company's development teams managed to create a broad spectrum of fascinating products. Frequently it was the interaction beyond the separate product areas of engines, motorcycles and cars that inspired the engineers and helped them find new solutions to technical challenges. In its research and development efforts, the company went beyond pure vehicle technology and opened up perspectives for mobility in the future.



### 04 | Production

In the 1920s, production at BMW was already distinguished by its flexibility. Mechanics could switch from the aero-engine to the motorcycle department according to market demands. Intelligent manufacturing structures and systems meant that, from the 1970s onwards, BMW was able to deliver the requisite volumes and variants of cars and motorcycles to high quality standards. From the 1990s, the linking of internal systems allowed for the short-term implementation of production launches and modifications.

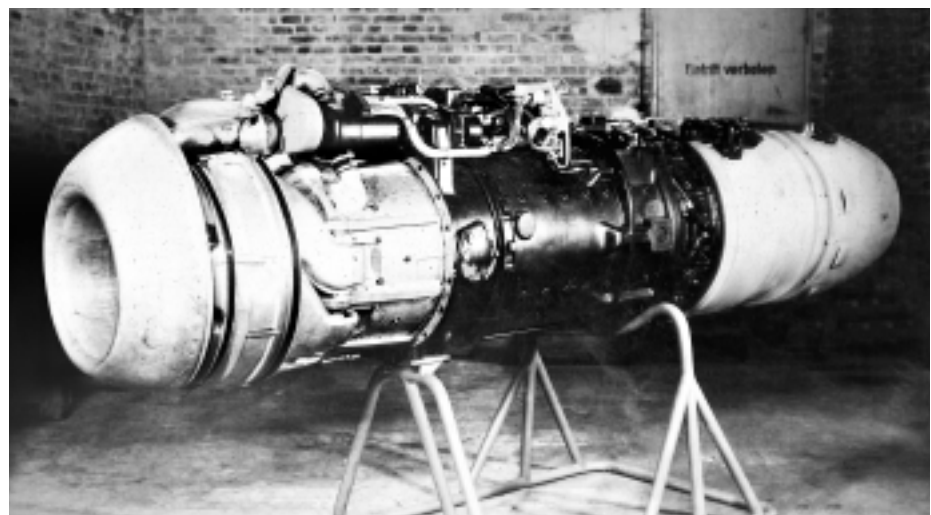
Top | Architectural fabric combined with process-led thinking: the Project House at the BMW Research and Innovation Centre.

Above | BMW Isetta assembly line at the Munich plant in 1960.

Below | First jet engine ever, BMW 003 with rocket booster motor.

### 05 | Engines

BMW's first products were aircraft engines. During the initial decades of the company's existence, these were its core products. Engines for aircraft, motorcycles and cars laid the foundations of the company's reputation in Germany and abroad, as well as enabling the small Munich-based firm to expand into a global operator. Engines have been at the centre of BMW's product history ever since.





## 06 | Motorcycles

Motorcycles defined the history of BMW from the early 1920s. Ever since then, these two-wheeled machines with their blue and white emblem have been a byword for reliability, quality and a sporty ride. Thanks to innovative technology, the company was able to keep up with the evolving demands of the marketplace over the decades, while also managing to win over new segments of buyers.

## 07 | Cars

After aircraft engines and motorcycles, BMW planned to start volume production of automobiles in the 1920s. The initial test beds and the manufacture of the Austin Seven under licence were followed by sporty six-cylinder models, helping the company to establish itself as a successful car manufacturer before the Second World War. After the polarised postwar portfolio of luxury models and micro-cars, the 1960s saw a homogeneous product family emerge which marked the start of the success story in the decades that followed.



Top | Pointing the way forward: the BMW R 90 S in the 1970s.

Right top | After the Second World War, the company continues its tradition as a car manufacturer with the BMW 01 and 502.

Right | A car for the new millennium: the fourth-generation BMW 7 Series.

Below | Master of every class: the racing version of the BMW M3.



## 08 | Motor sport

BMW and motor sport are inextricably linked. Since its beginnings, the company has sought out the sporting arena to demonstrate its competence and innovative powers. BMW has always plumbed the limits of what is technically achievable with great passion, precision and vision. The beneficiaries are its customers, since motor sport is the endurance test for many technical solutions that subsequently find their way into production models.





## 09 | Sales

The best products are of no value to a company if they can't be sold. That is why BMW set great store by developing and expanding its sales organisation from the very start. Technical competence, salesmanship qualities and a consistent image distinguish the company's history, along with the development of a broad-based further training programme and an efficient logistics system for the distribution of spare parts.

## 10 | Advertising

BMW advertising is far more than a colourful romp through the past. Advertisements and posters bear witness to the company's development since 1916 and afford insights into BMW's self-image. They paint a picture of a diverse product range and tell of the different ways in which customers were wooed and sales initiated. Communications with prospective customers are marked by evolving content and the introduction of new advertising media. ■

Left | BMW advertising poster from 1930.

## BMW Dimensions

### “BMW – The Company from 1916 to 2006”

BMW Group Mobile Tradition is publishing the definitive work on the history of the Bayerische Motoren Werke to mark the 90th anniversary of the company. On some 600 pages, the authors Manfred Grunert and Dr Florian Triebel have collated facts and background information on the history of BMW. This is an accessible, understandable and clearly structured book. Hundreds of photographs, sketches and advertising motifs spanning several decades bring to life the company's developments, events and successes.

This book will be available from booksellers from the middle of 2006 or can be ordered from:

HEEL Verlag GmbH  
Gut Pottscheidt  
D – 53639 Königswinter  
Tel. +49 (0) 2 22 39 23 00  
Email: [service@heel-verlag.de](mailto:service@heel-verlag.de)  
[www.heel-verlag.de](http://www.heel-verlag.de)



# Sheer fascination. BMW roadsters 1929 – 2006.

An open-topped, low-weight sports car with impressive performance: that is the essence of a roadster. BMW has been building roadsters for almost eight decades now, invariably producing models with an enduring fascination. The same goes for the new BMW Z4 – the incarnation of a modern-day roadster.

Sinja Kaiser

With the unveiling of the new BMW Z4 and Z4 M Roadster at Jerez and the Geneva Motor Show in February 2006, BMW presented the ultimate driving machine. Every inch a roadster, the BMW Z4 also epitomises the typical roadster look with its stretched engine compartment, tailored cockpit and short, pert rear. The driver sits just above the asphalt and feels at one with the car and the road. With technical highlights such as Dynamic Drive Control and electric power steering, the BMW Z4 delivers

maximum driving fun. The new BMW Z4 M Roadster rolls up with even more power. Instead of electric power steering, it features a hydraulic system for pin-sharp precision and higher steering speeds in corners. Few words need be wasted on the roadster's engine performance: anyone who blasts from zero to 100 km/h in five seconds knows what driving fascination means in 2006. Under the slogan "Sheer fascination", BMW Mobile Tradition is backing the launch of these models. The company can, after all, look back



on a roadster tradition that began more than 70 years ago. Since BMW began producing cars in 1929, its engineers have returned to this vehicle type time and again. Hardly surprising, since the roadster embodies the principle of “sheer driving pleasure” like no other car. BMW Mobile Tradition’s endeavour is to capture the fascination which these models have exuded from their inception all the way to the present. From the start the roadster was a byword for the thrill of motoring, for challenge and powerful progress. Wind, sun, road and environment come together to create a holistic awareness: a feeling of tremendous openness, an intoxicating sense of freedom. All that matters is the here and now. Anyone who drives a roadster is not concerned about arriving anywhere, covering a route from A to B. Nor are they keen to capitalise on the most pleasant season of the year, going shopping in their open-top car or conveying items from one place to another. Their sole concern is to savour the enthralling experience of driving for driving’s sake. No other automobile besides the roadster is so singlemindedly conceived to regard bends as a logical continuation of human motion and to view the world through the smallest possible windscreen – in wind and weather, heat and cold, on the flat and in mountainous territory.

**Sheer driving pleasure.** It comes as no great surprise that BMW had a close affinity with the roadster concept virtually from the start. Engine competence, innovative technologies and exceptional design come together in these vehicles. Powerful engines, advanced chassis and leading-edge engineering not only encourage record-breaking feats but also create a bond between employees and customers in their shared enthusiasm for automotive power harnessed in the service of rapid progress. In short, a long time before the official slogan was coined, BMW owners had one thing above all else firmly in their sights: driving pleasure. No wonder the BMW roadsters swiftly assumed iconic status and enjoyed such a large and enthusiastic following. Models like the BMW 328, 507 and Z1 are legends; they command record prices in the classic car world and have secured their firm niche in any history of motoring. The Z8, which was built as a homage to the company’s own heritage, had iconic status bestowed on it from birth.

**A long tradition of powerful emotions.** With the new BMW Z4, then, BMW is continuing a longstanding tradition that finds ever-new interpretations. It began in 1929, only a year after the very ▶





Top left | BMW Z1: this innovative concept remains fascinating to this day with its retractable doors.

Top centre | The BMW 319/1 had an output of 55 bhp and was right up to date with its "fastback" rear.

Top right | A tradition is born: the Dixi 3/15 PS – the essence of roadstering with a sporty, elegant body by the Ihle company.

Below | The first postwar roadster, the BMW 507, is regarded by many as the ultimate open-top car.

Facing page bottom | The new BMW Z4 M Roadster delivers sheer power and a more precise ride than ever before.

first BMW car rolled off the assembly line. The Dixi 3/15 PS went into production at the Eisenach car factory in December 1927. Fitted with a range of sports bodies built by the Ihle company, the Dixi 3/15 PS Ihle already had all the ingredients that make a successful roadster to this day: it offered agile handling, good looks and a powerful engine for the time, while also granting the driver an all-round view of everything he breezed past. There was just one respect in which it was more minimalist than later models: it had a single door – on the passenger side. Since that time, BMW has been building roadsters time and again. 1935 saw the appearance of the BMW 319/1, followed just a year later by the BMW 328 – winner of the 1940 Mille Miglia endurance event and an enduring legend. The BMW 328 was arguably the best-known prewar model produced by the Bayerische Motoren Werke. It had its market launch in 1937 and from that point on would dominate the racing scene of the time. It made its *début* on 14 June 1936 at the Nürburgring. "First race, first victory! What a car, what a driver!" were the kind of comments sparked by the maiden outing of the BMW 328. Behind the wheel sat no lesser man than Ernst Jakob Henne, "the fastest man in the world", also known as "the white phantom" for his countless world speed records on BMW motorcycles. "70 Years of the BMW 328" – this anniversary also focuses the attention of BMW Mobile Tradition's

events and publications for 2006 on the roadster as a four-wheeled concept.

**The legendary BMW 507.** Following the caesura of the Second World War, BMW presented another roadster highlight in the mid-1950s. The BMW 507, launched in 1955, may not have proved a commercial success for the crisis-racked company, but thanks to its aesthetic styling it earned great acclaim. Though not a motoring legend from the start, it would claim this status some decades later. Celebrities who drove a BMW 507, including the likes of Elvis Presley, contributed to its legendary status, as did the enthusiastic response of the media. For many, the BMW 507 remains one of the most beautiful cars ever built.

**The Z models.** In the 1960s and '70s, the roadster appeared to have gone out of fashion, but in the 1980s BMW breathed new life into the concept with its innovative BMW Z1, whose most striking attribute was its famous retractable doors. In the years that followed, three more Z models came onto the market: with the BMW Z3 the company was responding to an increasing fragmentation in the automobile market and, in its pricing, was also targeting a younger group of buyers. By contrast, the BMW Z8 was systematically developed as an exclusive super sports car that drew some of its styling cues from the classic 507, while at a technical level it moved straight into the top motoring echelon with its aluminium space frame and a 400 bhp V8 engine. The latest offspring of the roadster family, finally, is the BMW Z4, first presented in 2002 and celebrating a second premiere in 2006.

**Media campaign "Sheer fascination".** To mark the launch of this model, BMW Mobile Tradition is tracing the development of the roadster heritage. A broad-based media campaign brings vividly to life what has fed the passion for this type of car down the decades: the untrammelled sense of freedom that roadsters bestow on their drivers. Indeed, it is primarily an emotional force that draws people to these cars time and again, a fascination that cannot be explained on a purely rational level or in everyday terms. In its media





initiative, BMW Mobile Tradition aims to convey an authentic feel for this sensation, which people from the most diverse backgrounds have been experiencing time and again over the decades. With that in mind, the first task was to create a wide-ranging portfolio of new photographs that distil the roadster feeling down to its visual essence by depicting it being driven through breathtaking landscapes.

**All roadsters in full flight.** Another facet of this endeavour is the illustrated book *Sheer Fascination. BMW roadsters 1929 – 2006*. On 80 pages, the definitive roadster models in BMW's history are shown as roadster fans like to see them: in action. Some of these photos are also reproduced on these pages. Besides the book there is also a series of posters in extreme panoramic format that underline the unity of the car with its surroundings in even more compelling fashion. But above all, these glorious moments of roadstering are best conveyed through moving images. A specially made roadster film shows all the pivotal BMW roadsters driving at a brisk pace through a variety of landscapes. Rarely has any film footage succeeded in capturing this sense of harmony to such a degree. Even the prewar models are presented in fresh images that evoke their power, dynamics and charisma to modern-day aficionados – who, after all, rarely have the opportu-

nity to see these icons of the early decades in action on the road. The films are available in a long version with a wealth of historical background and a shorter clip that focuses even more sharply on the emotional aspect (the films and the book are available from Heel Verlag, Königswinter).

**The roadster in all its facets.** A special roadster issue of BMW Mobile Tradition live also offers background accounts and traces historical developments in the BMW roadster heritage. It sheds light on how the concept of this vehicle class emerged, what kind of people were drawn to it and the reasons why some of them became inveterate roadster drivers all their lives or felt inspired to create ever-new roadster models. The most important examples are profiled in the special issue, which depicts their continuity and innovations from both a technical and an aesthetic point of view. But the roadster theme would not be complete without the racing triumphs scooped up first and foremost by the BMW 328. It is, after all, a logical step to enter the racing arena with a vehicle concept as inherently sporty in design as the roadster. With the roadster theme, BMW Mobile Tradition is devoting itself in 2006 to one of the most exciting and emotional concepts of the carmaking heritage: that inimitable roadster feeling. ■





**BMW AG**

# Construction of the BMW Tower: a four-cylinder for BMW and Munich

“The biggest four-cylinder in the world – a landmark for the city of Munich alongside the Olympic Park. Ergonomically compact inside and clearly contoured outside, it is a boldly conceived experiment and a milestone in the history of architecture. BMW has created space for its expanding business with an administrative centre of the New Class.” Thus went an internal memo. The BMW Tower was constructed by architect Professor Karl Schwanzer and completed in 1973. The extraordinary design of this administrative powerhouse was to become a potent icon of the company. Today, the BMW Tower is known throughout the world and is home to BMW’s head office.

Nicole Marrenbach

During the 1960s, BMW was experiencing a period of unprecedented expansion. Spiralling production figures necessitated more space for administration alongside more production facilities. While manufacturing was expanded by acquiring Glas Automobilwerke in Dingolfing and Landshut in 1966, there weren’t enough offices for administrative staff in Munich. Although the existing office buildings at Plant 1 in Munich/Milbertshofen were expanded upwards and more space was created immediately adjacent to the factory, there simply wasn’t enough scope for the necessary expansion. The offices of a large number of administrative departments had to be moved away from the plant altogether. Office buildings in and around Munich were rented to accommodate staff, which meant that administration was dispersed across the city. It finally became clear that the company needed to build a dedicated central office building so that an administrative organisation with a central location could be planned and implemented. Herrmann Gieschen – Production Director from 1961 to 1971 – presented the first plans for a new administrative building in Dostlerstrasse to a meeting of the Board of Management on 14 June 1966. Gieschen was the initiator of its construction and from that point on he was the director responsible for all the arrangements associated with the new building.

The site for the new administrative building was identified to the south of the BMW plant. It had an area of 28,210 m<sup>2</sup> and was located directly on Dostlerstrasse, linking up with the main entrance to the BMW plant. The construction site in the northwest of Munich was located on the city’s new central ring road (“Mittlerer Ring”), bordering the section Petuelring to the south, with construction work on the road starting in 1968. The western boundary of the site was Lerchenauer Strasse. The television tower, opened in 1968, is on the opposite side of Petuelring to the south, together with the facilities constructed from 1968 for the 1972 Olympic Games. During the planning phase for the Olympic facilities, the site for the new administrative building was undeveloped, and it was used as a car park for the workforce at the BMW plant until 1970.

The new administrative complex was intended to be a landmark building, a symbol of the company that was designed to reflect BMW’s burgeoning importance.

**Tender and competition.** A competition was launched with the intention of achieving optimum solutions for the construction of a new administrative building and an iconic head office for the Group. The BMW executive management invited eight architects

with a track record in originating similar projects. The tender document issued in April 1968 specified that the new complex of buildings should include – in addition to the administrative building – a separate pavilion for an electronic computer centre and a multistorey car park. Parking facilities were particularly important because an increasing number of employees were travelling to work by car and a large part of the former car park for BMW staff was being taken up by the new head office.

The architecture of the administrative centre, computer centre and multistorey car park was to be closely integrated. The aim was also to create an architectural synthesis with the existing administrative Buildings 71 and 80 on the periphery of the plant site and outside it.

When planning the space for the new office building, it was important to take into account the fact that the advance of technology in administrative and production areas was causing a continual change in workflows. BMW was an automobile and motorcycle manufacturer and any changes were dependent on the sales successes of the products, the structure of the employment market, and the general development of office organisation. These were the factors determining whether more computers should be deployed or whether more staff were needed. The designs produced for the competition took account of these options for development. It was necessary to design an administrative building where the space could be divided up according to requirements and adapted to the changing needs.

While wanting to ensure that the conditions relating to the design of the space within the new BMW building were right, the executive management was equally concerned about the architectural merit of the new building. The promotional appeal of the building was particularly dependent on a generous and visually impressive design for the façade. The directors were also keen to have a leading-edge design for the road leading up to the head office with a square in front.

The general cityscape also had to be taken into account. The jury appointed to judge the entries was united in the view that the new administrative complex had to be given dimensions and a design that would not only reflect the importance of the company, but also blend in with the architecture surrounding the BMW plant. This consisted of residential buildings, the BMW plant, key traffic hubs, and the future Olympic facilities. The new buildings were to provide an impressive landmark, while at the same time melding harmoniously into the cityscape. ▶



Above left | The BMW Tower and the BMW Museum "bowl" with Petuelring in the foreground.

Above right | Aerial view of the site for the BMW Tower looking towards the northeast with the BMW plant in the background and Petuelring in the foreground.

The competition was launched on 14 May 1968. The documentation and designs produced by the architects had to be handed in to BMW two and half months later, on 5 August 1968.

**Evaluation of the tender designs.** The evaluation of the submitted designs commenced in August 1968 and the presentation was held on 10 October 1968 in Bad Homburg. The winning design was announced in November 1968.

The jury was made up of the following experts: Professor Dr. Ing. Friedrich Wilhelm Kraemer (professor of architecture and design for high-rise buildings at the Technical University of Applied Sciences in Braunschweig), Professor Gerhard Weber (at the Technical University of Applied Sciences in Munich), Ewald Mücke (municipal planning director in Munich) and as deputy, Jochen Wilk (city planner). BMW appointed a number of judges including Wilhelm Gieschen and Friedrich W. Pollmann (BMW Chief Financial Officer, 1963-1969) to represent the interests of the company.

After the presentation and an intensive discussion of the designs, the jury didn't award a first prize because it didn't seem possible to implement the works without additional corrections. They did, however, award two second and two third prizes.

Engineering and planning company Aktiengesellschaft für Industrieplanung from Munich was awarded a second prize for a design that reflected the style of the existing historic complex of Building 71, which originated from the 1930s.

This was a seven-storey tower block designed to be erected perpendicular to Building 71 and hence located at an angle of 90° to Dostlerstrasse. An impressive square to the west would feature the BMW emblem as a roundabout. The IT pavilion was to be constructed on the other side of the square, opposite the tower. A connection was to be built

on Dostlerstrasse between the tower block, the existing Buildings 71 and 80, and the BMW plant. This link was described by the jury as "ideal". But the award judges regarded the communication between the IT Centre and the administration complex as impracticable because the only roofed-in link was through the underground garage passing under the square. Apart from variable use of space in the offices based on a ground plan without the use of columns, the design of the executive floors was also criticised because office staff would have had to go through the executive management level in order to get to the kitchen or dining rooms. The architecture also failed to fully convince the jury because the tower was the only notable feature. The rest of the building complex appeared to be rather unimpressive and not designed to enhance the profile of the company. By contrast, the open area of the site located to the west in the form of a company car park earned praise.

An additional second place was awarded to Professor Karl Schwanzer. The Viennese architect (21 May 1918 to 20 August 1975) had been in charge of constructing the Philips office building in Vienna in 1966. He had also built several outlets and workshops for engineer Wolfgang Denzel, BMW's general agent in Austria. Denzel had always highly commended Schwanzer's work and he was responsible for recommending that BMW invite Schwanzer to take part in the competition.

The architect designed an extended low-level building with an underground car park as a plinth for the building. An administrative tower with a ground plan in the shape of a four-leaf clover rose out of the centre of this building. The low-level building reflected the style of the existing Building 71 and was configured in parallel to Dostlerstrasse.

According to the assessment of the jury, the strikingly original idea for the shape of the tower



provided visual harmony with the television tower and would therefore make an effective hallmark for the BMW plant – complementing the relationship between the TV tower and the Olympic Park. Schwanzer intended to place company emblems on the superstructure of the building to emphasise corporate identity.

Contrary to the tender conditions, Schwanzer didn't design a pavilion for the computer centre at a separate location, but integrated this on the left and right in the low-level building of the administrative tower. Instead, the canteen was situated in a separate building in front of the tower. This was criticised by the jury, and they also felt that the absence of a link with the existing Building 80 was a significant defect. Furthermore, the functionality of the circular open-plan offices – later praised as innovatory – was criticised: creating rooms with curved walls seemed unacceptable, even though this facilitated the basic principle of an office building that would permit variable use of space. Curved walls were perceived to be too futuristic, too remote from practical application and too experimental.

Although the design for an automobile museum had not been requested by the award jury, the Viennese architect designed an external, independent building for an automotive exhibition. The building was also designed on the basis of a circular shape and was to be located adjacent to the canteen, which at this initial stage of the design was still situated to the southwest in front of the low-level building. The view of the jury was that the proposal for a BMW Museum with a unique design at the junction of Petuelring and Lerchenauer Strasse was an inspired idea, because the circular design was extremely well integrated within the ensemble. The museum "bowl" provided a harmonious link with other cylindrical or circular buildings – such as the television tower, a group of gasometers in the vicinity, and a traffic island at the junction of Petuelring and Lerchenauer Strasse. The overall

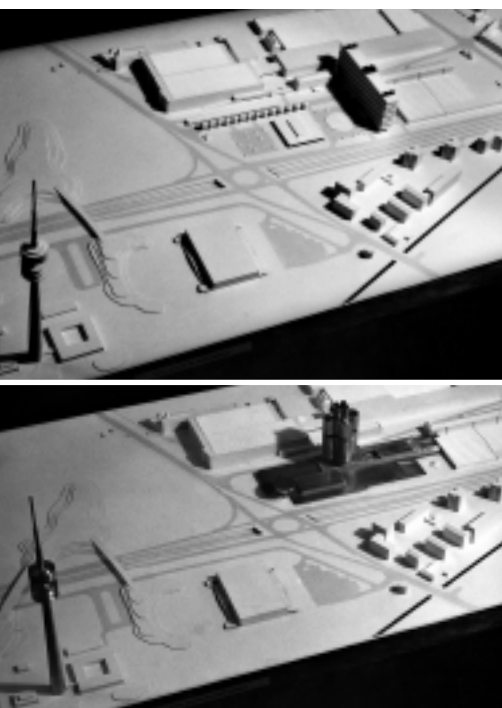
impression created by Schwanzer's design involving a complex of buildings comprising an administrative office block, museum bowl, computer centre, canteen and underground car park was regarded as having achieved the desired effect from a town planning perspective. It also made an impressive statement suited to enhancing BMW's corporate identity.

**BMW had to decide.** Since no first prize had been awarded by the jury and there was no clear preference for any single design, the ultimate and final decision had to be taken by the BMW executive management. Initially, Schwanzer's design was viewed rather critically in particular by Herbert Quandt and the Supervisory Board for the reasons referred to above. On the other hand, Paul G. Hahnemann, Sales Director 1961-1971, was convinced of the quality and benefits of the design. He believed it was important that the form of the building should create something unusual in order to live up to the image of the company. For this reason Hahnemann was only interested in Schwanzer's design. He was also of the view that the circular configuration of the office segments met all the conditions for variable office design. In order to convince his colleagues on the BMW executive management of the merits of Schwanzer's design, Hahnemann had a functional model of a standard storey with an open-plan office erected on a scale of 1:1 at the Bavaria film studios at Geiselgasteig in Munich. The architect paid for the costs of the model and a two-minute promotional film amounting to DM 200,000. Herbert Quandt and the members of the Board of Management and Supervisory Board were won over. At a meeting of the Supervisory Board at Bad Homburg on 2 December 1968 they awarded Schwanzer the contract to construct the administrative building with a square, a computer centre and a parking area. The idea of the museum was also adopted and subsequently included in the construction contract. ▶

Below | Model by engineering and planning company for the new BMW administrative building.

Bottom left | Model by Professor Karl Schwanzer for the new BMW administrative building.

Below | Professor Karl Schwanzer (centre) talking to Herbert Quandt (left).



**The basic concept of architect Professor Karl Schwanzer.**

The die was cast in favour of the administrative building in the shape of a four-leaf clover. In accordance with Schwanzer's basic concept, this incorporated the following characteristics of modern office architecture: short distances between individual departments to create efficient lines of communication and enhance office organisation, and maximum options for varying the allocation of space. The cloverleaf shape of the tower also created a harmonious profile from the perspective of city planning, and was at the same time a highly effective means of promoting the company. The intention was to complete the outside of the building by the 1972 Summer Olympics and achieve maximum promotional effect with the visitors to the sporting events. It was possible to see the new BMW Tower from all directions in the Olympic complex, and the location at an important traffic junction meant that the tower was in full view of cars driving along Petuelring and Lerchenauer Strasse. The unique shape of the building was designed to become a memorable landmark and an important focus for BMW. The BMW Museum bowl would become a key attraction for visitors.

Schwanzer believed that this was an advanced and unique office tower with a characteristic approach road and a square that

would not act as a thoroughfare. The design had selected clearly defined forms which conveyed precision, technical perfection and aesthetically appealing contours. It therefore provided an optimum representation of the successful image and high aspirations of the BMW car company.

In 1973, the Association of German Architects (BDA) awarded Schwanzer the BDA Award Bavaria for his achievement in designing and constructing the tower.

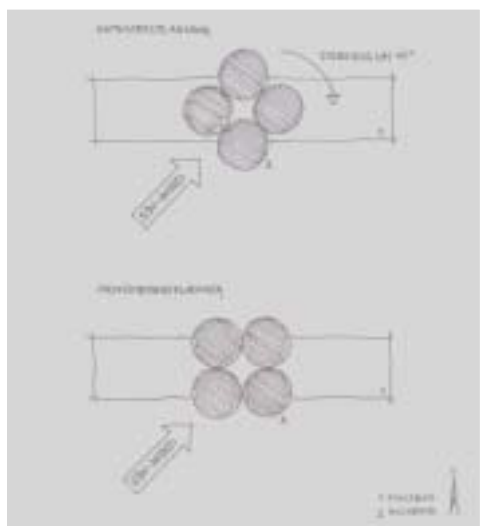
**From development to construction.** When the construction contract was awarded to Schwanzer, work began on drawing up a feasible concept for making the model a reality. This led to modifications in individual areas of the design, taking the most important criticisms by the jury and the executive management on board. The canteen was removed as a separate building and incorporated within the plinth area of the tower. The low-level building was therefore extended to the left and right. The position of the tower was rotated at an angle of 45° for its final position.

Apart from visual considerations, it is likely that this rotation was prompted by the wind tunnel test carried out with a 1:200 scale model due to the unique and innovative shape of the building. In the revised position, the flat front of the building was now

Above | Sketch showing the rotation of the tower axis through 45°.

Top right | Construction of the foundations for the tower.

Bottom right | Entrance area to the tower. The suspension columns are clearly visible.





directed towards the south. The wind mainly blows in a southwesterly direction, and this configuration meant that it could flow more easily around the building because it wouldn't strike a flat side of the building but only a cylinder. The results of the wind tunnel test also revealed that the basic design of the tower was advantageous. Because of the round shape of the tower, the wind would be much better able to flow past the building than in the case of a building with sharp edges.

When modifications were being made, the height of the roof superstructure was shortened, allowing a further two levels to be added to make a total of 22 storeys.

**Innovative and complex construction project.** The period of time required for the amendments to the design and detailed planning between award of the contract and start of construction lasted from December 1968 until July 1970. More than 150 working plans were drawn up for the new BMW administrative centre. They dealt with setting up the construction site, allocating the construction phases, scaffolding, optimising operations and deploying equipment. The quality, scope and specified functions for the new facilities were defined by Schwanzer in 240 design plans and 28 files with detailed descriptions of the construction and space. Organisation of the construction project also included contractual agreements with more than 85 specialist companies. During the most intense period of work on the project, a team of 600 people was working on site completing the shell and finish of the building. Schwanzer was personally in charge of the planning and supervision of the project. For the implementation phase, the companies involved in construction – Dyckerhoff & Widmann AG (Munich), Hochtief AG (Munich), Philipp Holzmann AG (Munich), Siemens Bauunion GmbH (Munich) – formed the syndicate Arge Verwaltungshochhaus BMW. In order to ensure that the outside of the tower would be completed in the agreed period of time to

coincide with the 1972 Summer Olympics, the contracts with the individual specialist companies defined a contractual penalty in the case of delays of more than four weeks resulting from negligence. However, throughout the entire BMW Tower project, this contractual clause was not invoked at any point. Neither was it a matter for discussion at any time.

**A suspended design.** The cloverleaf tower forms the climax and focal point for the ensemble of new buildings. The height of 99.5 metres met the maximum height requirement laid down in Munich's inner city planning regulations in 1968. This height limit is based on the towers of Munich's Frauenkirche, which are 98.6 m high. The height of a building may not exceed 100 m. The building is divided into 22 storeys, comprising 18 office floors with two executive management levels, four technical storeys and one basement. The structural framework of the tower is based on a design for a suspended building. ▶



Top | View of the BMW Tower from the Olympic Stadium during the Olympic Games.

Left | The first five floor levels are already encased in the façade.



Top | The first seven storey segments are raised with the assistance of the technical storey below (optical waistline) and a special cable construction.

Above | The completed building core looking towards the southwest.

The BMW Tower was to be the third suspended building in Germany, but the first tower of this type. The town hall towers built in Marl were the first German suspended building design, and the second building of this type was the Finnlandhaus on the banks of the River Alster in Hamburg.

The suspended building design used for the BMW Tower comprises the upper bearer cross, four suspension columns, the building core, the intermediate platforms, outer compression and tension supports, technical storey and foundation. The load exerted by the suspended cylinders is transferred through the bearer cross at the apex of the tower onto the building core and through the central column of the building to the foundation.

At the foot of the building core, the upper seven office storeys and the technical storey were initially constructed using conventional construction techniques and scaffolding. Construction of the storey segments did not then continue upwards with scaffolding; instead, the segments were raised using a hydraulic lifting press. The press was positioned on the technical storey and raised it up towards the bearer cross using a special steel cable structure. In this way, the upper seven floor levels were lifted up, and the storeys under the technical storey were then pulled up.

The storeys were raised in increments of 18 cm, and a storey height of 3.82 m was raised each week. This cycle was governed by the time it took to construct the individual floor levels. They were constructed on the ground, joined up with the floor level above, and then raised together with this, step by step, storey by storey, until the entire suspended structure had reached its final position.

During this phase, construction of the shell and interior finish were closely integrated. Once the stationary segment had been sealed off by installing the façade elements and windows with heat insulation and protection against the sun, finishing work would commence on the interior. This approach permitted construction of the building shell to proceed almost simultaneously with finishing work at a low construction height. In this way, construction time was reduced by several months.

The entire tower is encased in a silver-grey, self-supporting aluminium cladding – known as Alcast FF. This has a total surface area of approximately 15,000 m<sup>2</sup>. The façade is interrupted at the 15th storey by an optical waistline created by the technical storey.

**Optimum and variable office space.** What the directors initially regarded as too futuristic, too removed from practical applications and too experimental, was ultimately praised as the optimum solution for an open-plan office: the circular ground plan of four office segments on each floor level, created by the individual suspension columns of the tower. These four circular segmental arcs form the cloverleaf shape of the outer ground plan of the administrative building.

The available space in the 18 office levels is configured in a variety of ways: there are storeys with individual offices, team office or open-plan storeys, and technical storeys. The team office floors comprise four circular floor areas each measuring approx. 260 m<sup>2</sup>. These team spaces are connected without partitions or doors to create an open-plan office on one floor level with an area of around 1,040 m<sup>2</sup>. Four teams of between 25 and 30 people can work in each storey. Sound-insulated screens can be set up in variable configurations, and the offices of the section and departmental managers are located behind these screens. Screens like this enable additional individual conference rooms to be set up at short notice to accommodate confidential customer and visitor meetings.

Separate executive levels are located on the 21st and 22nd storeys – the top floors of the building – for the members of the BMW Board of Management. These levels are divided up into individual offices and have their own reception area with a waiting zone and conference



Left | Circular configuration of desks in the open-plan office.

Bottom left | Director's office in a separate executive management floor of the tower.

Bottom right | Recreation area with kitchen.

rooms. A separate restaurant for the executive management is also provided.

The supply and transport facilities with eight lifts, emergency staircases and sanitary facilities are located in the core of the building. The large number of lifts permits efficient and rapid links and communication between the individual floor elements. The four office cylinders are connected by corridors that run through the building core. These direct transverse links also ensure short lines of communication. General functional areas, such as floor-element services with reception area, a small cafeteria with coffee machine, a recreation room with armchairs and conference rooms, are located in corridors at the nodes joining the building core to the open-plan offices.

The circular construction means that distances in the open-plan offices are shorter than in square or rectangular floor areas, and this improves and speeds up communication.

Circular desks, mostly configured at the windows, naturally direct the routes taken by staff along the curved contours of the building.

The positive consequence is that staff don't have to go round corners or through doors when they are walking from one section to another, but can follow a fluid path without encountering any significant obstacles. It is a system that creates the shortest possible routes within this kind of office landscape. Moreover, the distance from an outside workplace at the window to the lift is only 25 m. The circular floor area of the offices also means that it's possible to achieve maximum use of space from the relatively low floor area of

the tower. In contrast to square areas, there are no "dead corners". This allows up to 1,800 employees to work in the new BMW administrative building on a total surface area of 30,950 m<sup>2</sup>.

In a nutshell, the big advantages of an open-plan office environment are the short distances involved, short lines of communication, and constant availability of colleagues for consultation due to the absence of walls. These conditions simplify and improve the teamwork that is so important for BMW.

**Scheduling and construction procedure.** The construction time for the new administrative complex comprising office tower, computer centre, underground car park, museum and outside areas was scheduled for 26 months. Since 70 percent of the construction site was involved in the building work, construction had to be carried out in stages. Work started on the tower and the operations building that forms the plinth of the tower. The underground car park and the museum followed nine months later, with the outside areas coming last.

Excavation began on 16 July 1970 on the site of the former car park for the BMW plant. The groundbreaking ceremony and associated commencement of construction followed on 28 July 1970. Two and a half months after the start of building work, the foundations of the tower and two floor levels of the basement had been erected.

Four months after the start of construction work, the core of the tower had been raised to the full height of nearly 100 m using the special Simcrete construction process. Installation of stair-





Top | The BMW emblem on a canvas screen during the Olympic Games.

Above | A helicopter transporting individual components of the emblem to the top of the BMW Tower.

Facing page | The BMW Tower by night, looking towards the northeast.

cases had already commenced while the lifting operation was proceeding, so that it was possible to climb up the shaft shortly afterwards. One year after the start of construction, lifting work began on the seven suspended storeys, i.e. the initial floor levels.

After 16 months, lifting operations on the floor segments came to an end. The shell of the administrative tower, the façade and the glazing had been completed, and work on the interior was already well under way.

The topping-out ceremony to celebrate completion of construction work was held on 7 December 1971. Two years after the building programme started, in July 1972, the outer profile of the entire complex of buildings, the outside area and the landscaping had been completed. When Munich played host to the world at the 1972 Olympic Games, the BMW Tower was finished and was seen for the first time in its full glory.

The museum and computer centre could already be used. The end of the contractual construction period was 30 September 1972. However, before the move into the building started on 22 January 1973, additional work had to be carried out and the interior design needed to be completed. An open day was held in mid-December 1972 for staff, to show them what their future workplace would look like.

The official opening ceremony for the new complex of buildings with a price tag of DM 109 million was held on 18 May 1973.

**The long route of the logo to the roof of the building.** For the roof of the tower, Schwanzer's concept envisaged company emblems being mounted on the bearer cross. However, the view of the city planning authority was that the effect of this would be too much like advertising. Effectively, this meant that the city was saying it didn't agree with installing a company logo, and a legal dispute ensued. The Chairman of the Board of Management at the time, Eberhard von Kuenheim, had BMW emblems on canvas screens placed at a height of nearly 100 m on the east and west of the roof superstructure for "trial purposes".

Mounting the logo on the western side was particularly important for promotional purposes because the emblem could be seen from the Olympic Stadium. The intention was to attract the interest of visitors to the Games. BMW incurred a fine of DM 110,000 by displaying the company logo in breach of city regulations.

Despite this municipal resistance, BMW continued to pursue a policy of displaying the emblems on top of the building and held a protracted series of discussions with the City of Munich. It wasn't until autumn 1973 that negotiations were successfully concluded with approval for mounting

the BMW logo on all four sides of the roof superstructure. The emblems were finally put in place in November 1973, with a helicopter transporting the individual elements of the emblem onto the roof.

**From high-rise building to gleaming "four-cylinder".** Apart from the requirement for modern office space with the potential for flexible configuration, the tender document for the competition stressed that the new head office should be an architectural structure that would constitute an iconic representation of BMW as an automobile company and be a potent promotional symbol. When the BMW Tower was completed, it was abundantly clear that all these aspirations had been met. The new administrative building reflected technical perfection, aesthetically pleasing contours, and functional logic. In short, it possessed all the attributes that you would expect of an automobile.

This meant that people inevitably looked for comparisons with the world of engineering, for example with engines or spark plugs. In particular, the people of Munich felt the need to make such comparisons as they engaged with the tallest administrative building in their city. This was how the designation of the "Four-Cylinder" came into being. And this name has been used across the world ever since. BMW also took up this comparison and referred to the "biggest four-cylinder in the world" in the BMW Tower Report published in 1973.

The BMW Head Office has been a listed building since 1999, and its shape and design make it one of the most original buildings in Munich. It has become a coveted subject for professional photographers and tourists alike.

The tower is undergoing a process of renovation lasting from 2004 to 2006 in order to preserve the building. In parallel with this conservation work, a new BMW Museum is being constructed on the site. The Museum bowl will remain the visual focal point, while being augmented by an extension to the western low-level building. The BMW Welt designed by Viennese architects Coop Himmelb(l)au is the third innovation being constructed. This will be to the west of Lerchenauerstrasse. It will include a BMW Experience Centre, and its innovative architecture will form a link between the complex of buildings constructed in 1973 and the facilities built for the Olympic Games.

Thanks to the façade illumination, which has been in place since 1972/73, the Four-Cylinder will continue to radiate across the city at night as an iconic beacon for BMW and the City of Munich. The difference is that it will now form part of an ensemble comprising the BMW Tower, the new Museum and the BMW Welt.



The long journey of the BMW 1600 through the boardrooms

## “A genuine BMW”

9 March 1966 was to be a special day. BMW had been around for 50 years, and the executive board had been planning the celebrations to mark this major anniversary for more than a year. Munich's opera house formed the festive backdrop for the event. On the square in front of the august building in the centre of Munich, the witnesses of the past were lined up – among them the BMW R 32, the first motorcycle in the company's history, and the BMW 328 racing legend. Amid these hoary antecedents stood a car that was on show to the public for the first time that spring day: the BMW 1600. The company executives had made a snap decision to include this latest model, even though the official world premiere was scheduled for the following day at the Geneva Motor Show. At the time nobody could imagine the extent to which this new model range would bolster BMW's fortunes in the coming decade – not even the Board of Management of the Munich-based vehicle manufacturers. The following chronology recounts the long and circuitous path that led to the first public appearance of this compact two-door car which founded the BMW 02 model series.

Manfred Grunert





The story of the BMW 1600 could not be written without the BMW 700. This small car with its twin-cylinder engine led the company through the depression of the year 1959 and was regarded as BMW's second mainstay next to the models of the New Class that emerged in the early 1960s. Three years after its market launch, discussions began on how to ensure a brighter future for the BMW 700, or the BMW LS as the car was listed from 1962 following a model revision. It was above all the engines that caused knitted brows in the boardroom. In February 1962 Wilhelm Gieschen, Member of the Board of Management responsible for technical issues, presented the Supervisory Board with proposals to develop a small medium-range car that would eventually replace the BMW 700. In Gieschen's view, however, it would need a more powerful engine. Trials with Arabella units from the Borgward group in Bremen were already underway.

This careful query regarding a successor to the BMW 700 was followed in November of the same year by a far more intensive debate between the Supervisory Board and the Board of Management on the issue. Dr Karl-Heinz Sonne (see portrait, page 56), who had

been elected Chairman of the Board of BMW on 15 February 1962, informed the monitoring committee in his report on the state of the company of the conditions that would have to be met for a new car model. He began by describing the difficult market environment of the BMW LS: "When Ford and Opel launched their products in the small car segment in the months of September-October, the question was justifiably raised as to whether, and to what extent, BMW with its LS Luxus model and hefty price tag of DM 5,320 had reached the ceiling of what could be justified in terms of price. Since the early days of the BMW 700, there has remained a dislike of our air-cooled two-stroke 700 which, after the introduction of the much-improved LS, ought by now to have been overcome. The brief period in which the engine has been in operation allows no definitive assessment of its lifespan as yet. Estimates range from an operating life of between 50,000 and 60,000 kilometres. But this engine not only has a shaky reputation; with its 30/32 HP and limited displacement for the price segment we have chosen, it is also too weak." ▶





Above | The history of the BMW 02 Series began with the BMW 1600.

It was for this reason that the BMW LS was given a 1.3-litre engine mounted not at the rear but in the front. Although Sonne described the new car as a “rocket”, he did not omit to inform those present of the drawbacks of the concept: the car would remain narrow, as before, and offer less comfort compared with the competition, while the necessary modifications to the body would require an investment in tooling equipment to the tune of five to six million marks, which meant that a selling price below DM 6,500 was out of the question. For these reasons, Sonne went on, the creation of an entirely new car was being mooted, “which, as a genuine BMW, would enter the market in 3-4 years and be able to accommodate a 1.3 to 1.5-litre engine”. The aim of the Board of Management, he went on, was to commission an Italian coachbuilding company with the design and construction of a prototype. To bridge the gap until the launch of this “genuine BMW”, an LS with an air-cooled 900 cc engine was to be marketed. The Chairman of the Board of Management believed completion of this 36 to 38 horsepower vehicle could be anticipated as early as 1963. Sonne’s deliberations were followed by a joint inspection of the LS with its front-mounted 1.3-litre engine. By then the Supervisory Board appeared to be won over by the proposal and had the following recorded in the minutes: “The Supervisory Board would like to see work on the 707 model (extended LS, 1100/1300 cc front engine) expedited, provided budgetary estimates indicate that the maximum price of DM 6,500 quoted by the sales department could be maintained.

Otherwise a means of carrying out limited modifications to the BMW LS would have to be sought in order to bridge the gap to the prospective small car, which is not expected to be completed until 3-4 years time.”

By the end of 1962 it was thus clear that the BMW 700 would have a successor and that the company, despite fierce competition, would sustain its commitment to the small car segment. But early in 1963 the first opposition to this solution emerged within the Board of Management. Paul G. Hahnemann, the head of Sales and Marketing, aired his thoughts on the matter in a Board Meeting of January 1963. As he saw it, he declared, it was primarily a matter of the “upgraders”, who were of crucial importance to sales. Among the competition, the percentage of new-car buyers who had previously driven a car of the same brand was quite significant. Also in the case of the BMW LS Luxus, a notable 49.3% of buyers had traded in BMW models. But, he added, exploiting this factor assumed that the gap between the various vehicle types within a company was not too great. The price difference between a BMW LS and a BMW 1500 was, in Hahnemann’s view, unbridgeable for potential upgraders. This fact led him to the conclusion that, for the long term, the sensible thing would be to develop a new car for the lower mid range and end up with three different models, i.e. a small car, one in the lower middle range and, lastly, a mid-range model.

**Either – or.** But this was far from any decision that BMW would actually offer a model in the lower mid range.

In fact, there were other alternatives being proposed. In March 1963, Chairman of the Board Karl-Heinz Sonne was already suggesting that the company ought to consider developing an affordable two-door BMW 1500 saloon. Should this proposal come to fruition, the Board felt that the idea of the small mid-range car should be shelved and, in its place, a small car designed for the DM 5,500 price segment. That brought the number of cars under discussion to a total of five: an extended LS with a front-mounted 1.3-litre engine, a minimally modified LS with a 900 cc engine, an all-new small car with a water-cooled 1,000 cc engine, a two-door BMW 1500 and, finally, the new small mid-range car – the “genuine BMW”. But no satisfactory solution was to emerge in 1963. The only matter on which a clear decision had been taken was the project name: whichever guise the vehicle was to take, from now on it would go by the name of the BMW 114.

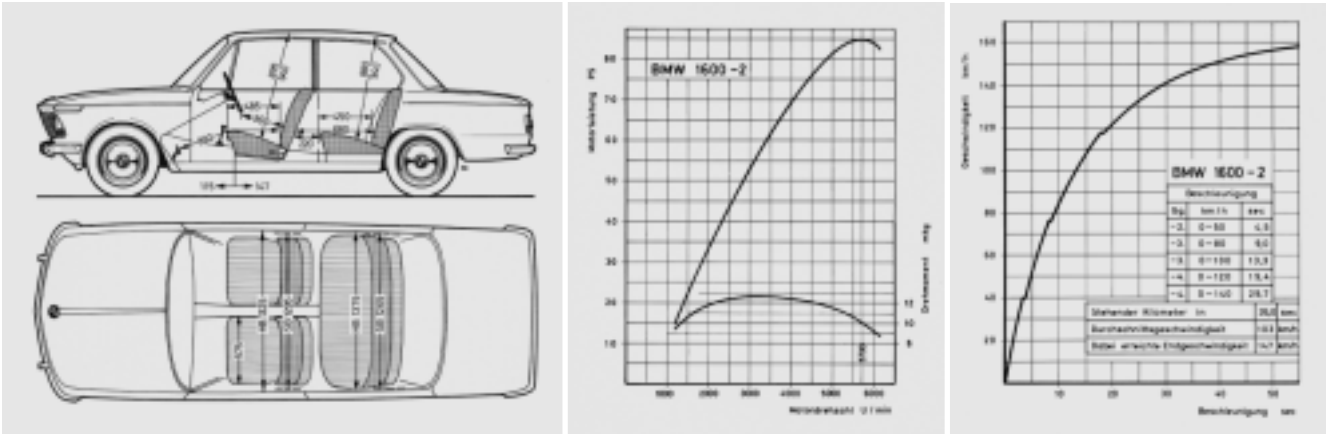
Not least triggered by the passive stance of the Board of Management, a heated debate ensued at the Supervisory Board meeting of November 1963 regarding the 114 and BMW's future model portfolio. Hahnemann once again put in a forceful plea for a small mid-range car: “We can produce a car with something special; it would be the BMW 114, eminently comparable with the competition, partner engine 1500, a lively car. We can do it... We would deliberately dispense with 4 doors so as not to impinge on the next model up.” And, Hahnemann went on, the two-door saloon would not be all, but the model range of the new series could be extended to include an “estate car (caravan) with the character of an ordinary passenger car” as well as a coupé. However, he cautioned, this scenario would permit no future for the small car any more: “Its launch would mean an end to the LS.” Sonne, together with the Board Member for Finances and Accounting, Friedrich Pollmann, backed this argument against the ▶



Above | From 1962 the BMW LS Luxus was BMW's great four-wheeled hope for the small car segment.

Below | The BMW 02 Series was meant to plug the gap between the BMW LS small car and the mid-range BMW 1500 and 1800 models.





objections of Works Council Chairman Kurt Golda, who reminded those present that it was the BMW 700, i.e. the small car, that had played a pivotal role in pulling the company out of the serious crisis of 1959. For that reason alone, Golda felt it was anything but forward-looking to reject a small car. Although Hermann Karoli, the Chairman of the Supervisory Board, agreed with Golda, he likewise could not envisage any potential groups of buyers for three different models, so that from his point of view they could build either the small car or the small mid-range car, but not both.

It was Karoli's deputy, Gerhard Wilcke, who finally attempted to bring about an agreement by suggesting that another manufacturer could produce the small car. That would give them three different model series while at the same time allowing BMW to bundle its production capacities for the 114 model and the mid-range cars of the New Class. Hahnemann then reiterated that he, too, was keen to see the small car but that this was regrettably not possible as, firstly, there was insufficient capacity, and secondly, the gap between the small car and the medium car was too big to persuade customers to move up within the BMW model range. Instead of accompanying customers in their ascent up the car scale, the danger was that they would fall by the wayside. After

this far-flung debate the Supervisory Board decided that a small mid-range car with a 1.2 to 1.5-litre partner engine should be presented at the 1965 Frankfurt Motor Show and that by then – as far as possible – 500 demonstrator cars should be built. Beyond this the committee was in no doubt that starting production of the small mid-range car would mean the end of production for the BMW LS or 700. With that, the 114 model appeared to be a done deal and small car production no longer part of BMW's forward planning.

**Two not four.** Shortly after the decision by the Supervisory Board, the first concrete steps were taken. At the meeting of 26 November 1963, the Board of Management decided that the 114 should only be built as a two-door version since this solution was cheaper than the four-door model. Moreover, assuming there would be no alterations to the doors, tooling costs could be saved for the coupé and the estate version. But this argument was soon called into question. In March 1964 Gieschen reported a telephone enquiry – the exact source was not recorded – in which it was again suggested that it might be advisable to fit the BMW 114 not with two but with four doors. However, the Board



Above | Key specifications of the BMW 1600.

Left | The 1964 BMW Calendar featured the BMW LS Luxus for July. It had already been decided to phase out the small car in favour of the BMW 02 Series.

# DER WAGEN MIT PROFIL



of Management corroborated its earlier decision. It wasn't a month later before the executives were once more faced with the four-door option. This time it was majority shareholder Dr Herbert Quandt who passed on a written query through the Chairman of the Board as to whether the BMW 114 was to be built as a four-door version. But this time, too, the Board stuck with its decision: the 114 model was to have two doors.

**Millions.** In the meantime plans took on ever-more tangible shape. For the first time it was possible to draw up a costing of the investment requirements. According to these calculations, 43 million marks would have to be ploughed into building the new model range. It meant almost half of all investments for 1965 would go towards the BMW 114. The Board of Management agreed to the proposal, but the approval of the Supervisory Board was still pending. On 14 April the monitoring committee met. It soon became clear that the gentlemen were not prepared to approve the 43 million marks without demur. In particular the news that the new car was to cost not DM 6,500 as originally planned, but would lighten customers' pockets by DM 7,500, caused considerable apprehension. Doubts were aired as to whether the car would sell at that price.

In the course of the discussions the subject of the shelved BMW 700 cropped up again. Having the car pro-

duced by the Belgian importer Moorkens was suggested, as was the use of a 1,000 cc engine to be commissioned from the design office of Austrian importer Wolfgang Denzel. The Board saw itself confronted with considerations it had thought long ago laid to rest. Again it was Hahnemann who addressed an appeal to the gathering: "We take the view that the LS Luxus is quietly but surely dying... We can never produce it at a competitive price, and at a rough estimate I believe I that on balance we will always be DM 500 above the competition. So what should we do? ...We should create a genuine BMW car. 30% of upgraders are anticipated from our own stock of BMW 700 owners. That is why we want the 114... We have to be clear about what we must do and what we can do. We must finally come to this point for the sake of the dealer network as well. The sales organisation simply cannot cope with motorcycles, small cars, mid-range cars, Bertone etc... We can't recommend the water-cooled engine at one point and then revert to the air-cooled version again. It will also make production easier if we don't fragment ourselves so much." Wilcke embraced Hahnemann's arguments, which he saw as having at least the resemblance of a sensible plan, but he nevertheless demanded a more precise budget calculation. Sonne responded vehemently to Wilcke's defences and threw out figures to show that the production of a small car would generate turnover but no profit: "I would ▶

Above | In 1963 sales of the BMW LS were boosted by a campaign under the slogan "A car with a profile".



Oben | Lifestyle at the start of the 1960s: woman with telescope, sailor's hat and BMW S Luxus.

entirely oppose doing this merely to keep the dealers supplied or to generate turnover." After this heated debate the Supervisory Board agreed to the demands of the Board of Management and approved the 43 million marks in the absence of a detailed technical budget. The Board had achieved its goal.

**The last word.** In June 1964 – by now the car's design had been approved and the first test cars were already on the road – the Board of Management discussed which engine to place inside the 114 model. The favoured option was no longer a 1.3-litre unit, it was now a 1.5-litre engine that was being planned. With the realisation that there had been no express decision by the Board of Management so far, it became a matter of urgency for the issue to be clarified as quickly as possible as the deadline for ordering automatic crankshafts for a 1.3-litre engine was 15 July 1964. Chairman of the Board Sonne argued in favour of the larger engine, as this would mark the car out from the competition with its price tag of over DM 7,000. Moreover, with a 1.5-litre engine in the BMW 114 the company would be offering a car that had sufficient reserves so as not to have to be driven permanently at the limit, making it less prone to break down. Furthermore, the 1.5-litre class posted the biggest sales growth in Germany. Economically, this engine would bring only benefits. The larger unit was not more expensive, it was argued, but with the elimination of set-up times in manufacturing it would be even cheaper than the 1,300 cc engine. Besides, it wouldn't require a different crankshaft train nor any special stock and management of

spare parts. Having heard this litany of arguments, the Board of Management took its Chairman's side and approved the choice of a 1.5-litre engine.

Once the engine issue appeared to have been basically clarified, the planned start-up date was subject to delays. In November 1964 the Board of Management responded to the state of planning and had a new deadline drawn up: "Since the completion of the necessary components for the production of the BMW 114 have been unavoidably delayed, and as a series of modifications have had to be decided during the development period of the BMW 114 to enhance the quality of the car (to match the competition), the Board of Management has decided to begin production of the BMW 114 not, as originally envisaged, in September 1965 but in January 1966." Not only the timescale had shifted but the pricing was also adjusted to meet the cost of production and materials. The new car would be sold for DM 8,250. This increase compared with the earlier pricing plans resulted from the fact that, contrary to the original concept, the car had to be made 155 mm longer and 84 kg heavier for competitive reasons. It had, furthermore, been decided to give the car interior fittings which largely approached the quality of a mid-range model. Finally, the choice of engine was altered again. For reasons of competition and price, the Board of Management had resolved to offer a 1.6-litre engine with an output of 75 bhp. A performance-enhanced 83 bhp version was planned for a later stage.

After all the key specifications for the new car had been finalised, two questions remained to be clarified: the marketing designation and the revised calculation for the Supervisory Board. The latter was tabled at the meeting of the Supervisory Board on 15 September 1965. Based on this, breakeven point would be reached in around four years or after sales of 100,000 units. The Supervisory Board expressed its disappointment at the slim profit margins and called the entire project into question at the outset of the meeting, whereupon the board commission enume-





Top | 1970 saw the 250,000th BMW 02 Series model leave the factory.

Above | One of 860,000: handing a BMW 02 over to its buyers.

Below | Brochure photograph of the 1966 BMW 1600.

rated a long list of reasons why the car had to be built. Hahnemann reminded those present that when discussions began on the production of a small medium-range car, the aim had been to provide the company with a further pillar of support. The considerable price increase compared with the original figures discussed could be explained by the unfavourable conditions. Now, he went on, the question was whether it would be remotely feasible to jettison the BMW 114. The fact was that the imperative need to boost sales would be very difficult to achieve with a single product. Daily production of the mid-range car had already risen significantly compared to the previous year... Ramping up production of a single car, however, had its limits. For that reason it wasn't merely expedient but absolutely vital from the company's point of view not to limit oneself to just one class. For these reasons, rejecting the BMW 114 was out of the question. Rather, it should be the common aim to achieve the best that was conceivably possible with this vehicle. Gieschen added to these arguments that profits generated by the mid-range car would rise because its assemblies would also be used in the new BMW 114.

After the 114 model had been salvaged despite the reservations of

the Supervisory Board, the Board of Management now also addressed the matter of how the car should be badged for the market. On 12 October 1965 the company management minuted the following: "The Board of Management has decided that the BMW 114 should be given the official designation BMW 1600. To differentiate it from the new BMW 1600, the existing BMW 1600 will be known internally as the 'BMW 1600 V' (= viertürig [four-door])." Thus the new BMW 1600 was named. In the light of the convoluted discussions that had revolved around this vehicle, it was almost a miracle that it made its public debut in front of Munich's opera house a mere six months later. That the decision-making process had been such a long and laborious affair was only partly down to the BMW 1600 itself. It had been, rather, a matter of plotting the company course in terms of which model programme would be most likely to ensure success in the medium term. When one sees the sales figures for the BMW 1600 and its 02 Series successors, it is clear that this had been a worthwhile debate: 860,000 customers opted for the two-door model from Munich before the 02 Series was phased out in 1977 – an absolute record in the history of BMW. ■





Cult cars in Europe and the USA

## The BMW 02 Series

The 02 Series delivered the vital boost in car production that BMW badly needed. From the BMW 1600 all the way to the BMW 2002 turbo, which was unveiled in 1973, these mid-range models have long enjoyed the cachet of cult cars.

Kai Jacobsen

Financed by revenues from the New Class, BMW was able to present its two-door BMW 1600 at the Geneva Show in spring of 1966. It was the first model in a new range which would subsequently enter the motoring history books as the 02 Series. Early 1967 already saw two BMW 1600-2 models being equipped with the 2-litre engine of the New Class on a trial basis. Sales director Paul Hahnemann managed to persuade the BMW executive board that a car of this kind would be a guaranteed success – and he was proved right. It wasn't just the German and European markets that were receptive to a fast and agile compact car – even the recently emergent US market was a target for the model, particularly since the fastest two-door model up until then, the BMW 1600 TI, was banned from export to the United States on account of its emission levels.

**Powerpack from Germany.** In January 1968 production began on the BMW 2002, heralded by BMW's press department as a "powerpack". This 100 bhp two-door model combined easy handling with a dynamic ride, while a standstill to 100 km/h acceleration time of 10.9 seconds brought it close to the performance

of a sports car. Even the price of the new model was a sensation. Since all the technical components had already been tried and tested and were available in BMW's "construction kit", the BMW 2002 went on sale for DM 9,240. In the very first year of production, BMW sold more than 30,000 models. By 1972 this number would climb year on year to more than 65,000 units. Most satisfactory of all was the growth in sales in the USA. Exports to America rose to an average of nearly 20 percent of production, which was a major achievement for BMW. The American car testers struggled to find words to express their delight with this "whispering bomb".

In May 1969, BMW also offered the 2002 as an automatic. Again it was simply a question of plucking the components from the shelf, since the 1800 and 2000 models of the New Class had already been available with a ZF three-speed automatic transmission since 1966. Indeed, the torquey 2-litre engine forged a truly harmonious partnership with the automatic and only sacrificed a modicum of liveliness. With almost 340,000 BMW 2002 saloons sold, this model smashed all previous records. Almost a third of the cars went to customers in the USA.



**BMW 2002 TI with 120 bhp.** A mere six months or so after the 2002, the BMW 2002 TI appeared. With its two Solex twin side-draught carburettors, the engine now had an output of 120 bhp. A wider track, chassis reinforcements and an enlarged brake-contact surface did justice to the boost in power. The model also came with sporty features such as a rev counter and leather steering wheel as standard. In April 1971, the BMW 2002 tii joined the already plentiful variants of the BMW 02 Series. For an initial price of DM 12,765, customers got a sports saloon with a performance profile that differed slightly from that of the 2002 TI. Although its 130 bhp responded with even greater alacrity to pedal movements, the transmission in the basic four-speed version initially had somewhat longer gear ratios, which meant acceleration did not quite match the figures for the 2002 TI. In terms of top speed, however, the 2002 tii had the edge at 190 km/h. What was particularly impressive was the economy of this high-output unit: with a reasonably moderate driving style it wasn't too difficult to get by on less than 9 litres of fuel per 100 kilometres. Despite a price tag almost DM 2,000 higher than that of the 2002, success wasn't long in coming: 7,449 cars were exported to the USA while 3,680 right-hand-drive versions went to countries where traffic drove on the left. A total of 27,574 standard versions of the BMW 2002 tii had been turned out by the time production ceased in June 1975.

**Major model enhancements.** The launch of the BMW 2002 tii in 1971 was accompanied by extensive model enhancements among the 02 cars. These included a four-speed transmission with Borg-Warner synchronization, bumpers with rubber strips and larger overriders at the front, as well as a revised dashboard. Model year 1974 brought with it further modifications, including a black plastic radiator grille with a larger "kidney", rectangular tail lights, sporty five-inch wheel rims with ventilation apertures for the brakes, a larger brake servo, a bigger fuel tank, improved exhaust silencing, safety padding on the four-spoke steering wheel, as well as improved front seats, head restraints and three-point seatbelts as standard.

**The BMW 2002 turbo.** The fastest BMW in the 02 range was presented at the Frankfurt Motor Show in September 1973 – the legendary 2002 turbo. An exhaust turbocharger, the first to feature in a European production car, breathed an extra 40 bhp into the already powerful injection engine of the 2002 tii. The BMW 2002 turbo with a top speed of 210 km/h, however, entered the market in the middle of the oil crisis and was forced to live rather an outcast's existence. From January 1974 until mid-1975, just 1,672 cars were built, almost all of them with Chamonix (white) or Polaris metallic (silver) paintwork.

The BMW 2002 wasn't only popular among ordinary motorists, but went down well with celebrities as well. In the early 1970s, the ranks of BMW 2002 owners included skiing champion Walter Demel, footballer Gerd Müller and actor Harald Leipnitz. Klaus Wolfermann, Olympic javelin gold medallist of 1972, and TV hostess Petra Schürmann also drove 02 Series models. The BMW 2002 proved successful on the race track as well: in its maiden touring car race of the 1968 season, a BMW 2002 with an output of more than 200 bhp was taken to an impressive start-to-finish victory by BMW works driver Dieter Quester. In 1970, Hans-Joachim Stuck drove a 2002 to his first win in the Nürburgring 24 Hours. ■

From the late 1960s, BMW offered a colourful range of models with names evoking holidays and sports: Florida, Turf, Derby, Bristol, Chamonix, Atlantic, Caribe, Sahara, Manila, Nevada, Tundra, Baikal, Malaga, Riviera, Golf, Inka, Taiga, Fjord and Ceylon.



Top | Reserved exclusively for the BMW 2002 TI in its first months of production: Colorado bodywork paint.

Centre | The perfect companion in winter as well: a BMW 2002 TI with Granada bodywork paint and optional halogen driving lights.

Bottom | The BMW 2002 Cabriolet with a roll hoop was only available in 1971 and 1972 in the special Condor finish by Baur.



Above | Holger Lapp, Director of BMW Group Mobile Tradition, Arthur Heimann and Klaus Kutscher on the first outing in Munich for the new BMW 2002 tii.

## BMW breathes new life into the cult car of the 1970s

**Munich.** In full view of the public, BMW Mobile Tradition has rebuilt a BMW 2002 tii, registration year 2006. This 1970s cult car was created entirely from new components. Day by day visitors to the BMW Museum at the Olympic Tower were able to monitor its progress in the “Glass Workshop”. In January 2006, after nine months of work, the car was finally up and running. Klaus Kutscher, who heads the BMW Group Mobile Tradition workshop, along with master mechanic Arthur Heimann and their team had invested more than a thousand working hours into building the new BMW 2002 tii and used several thousand original BMW parts. The car is based on an original bodyshell from the 1970s. It had to undergo modifications, however, in order to meet the requirements to create a faithful 1972 model. More than 90 percent of the parts came from the warehouse of BMW Group Mobile Tradition, while missing components were taken from donor cars, remanufactured by hand or obtained on the open market. A key factor in the success of this project was the excellent parts supply from BMW Group Mobile Tradition, which is also available to fans and owners of classic cars. The BMW Parts Catalogue now contains more than a thousand items and is also accessible on the internet at [www.bmw-mobile-tradition.de](http://www.bmw-mobile-tradition.de). BMW Mobile Tradition will present the BMW 2002 tii in typical 1970s Inka orange bodywork at Techno Classica 2006.



Top right | Inka orange, a typical 1970s colour.

Centre | A powerful heart for the 2002 tii: 2.0-litre four-cylinder with 130 bhp.

Bottom | Original model script of 1972.



# Originalität.

Bei BMW ist Sportlichkeit nur ein anderes Wort für Fahrsicherheit durch Kurvenverhalten, Richtungsstabilität, Spurtvermögen und Bremsleistung. Nach diesem Prinzip bauen wir seit vielen Jahren einen eigenständigen, dynamischen Typ Automobil.

Wenn trotz der zahlreichen „sportlichen“ Alternativen viele unsere Auffassung von Sportlichkeit teilen, so liegt das einmal daran, daß sie den Reiz des Originals schätzen. Und zum anderen daran, daß die Kopien als solche zu erkennen sind. Beim Fahren.

**BMW 1602, BMW 1802, BMW 2002, BMW 2002 ti**

Automobile, die alle Merkmale leistungsstarker Reiselimousinen mit den Eigenschaften wendiger und wirtschaftlicher Stadtwagen verbinden.



BMW – Freude am Fahren



Off the beaten track

## The history of BMW off-road competition up to 1939

The current HP2 Enduro models from BMW Motorrad set new standards in the off-road motorcycle segment. Never has the development of a motorcycle been so finely tuned to the demands of the rider with sporting ambitions. But as well as the built-in technology, the HP2 Enduro also carries a gene inherited from over eight decades of BMW off-road competition. After all, it was exactly 80 years ago that BMW notched up its first international off-road success, courtesy of one of its engineers.

Fred Jakobs

When BMW riders first started racing in the 1920s, the distinction between on-road and off-road racing was a thin one. Race tracks in those days were at best nothing but compressed gravel tracks. Although the routes were cleared of fallen branches and rocks before races got under way, a sudden downpour could turn the surface into a quagmire in a flash, as a newspaper report on the 1926 Solitude circuit race testifies: “The riders will look back on

this appalling race with horror, having been forced to endure water, mud, hailstones and the pitch blackness of the woods.” BMW riders won the event in the 250, 500 and 750 cc classes.

**On-road or off-road?** More impressively still, perhaps, the early courses differed little in terms of profile from today’s off-road trials. The notorious Targa Florio on the island of Sicily, for



example, consisted of three 100-kilometre laps each with 1,000 metres altitude difference. To add to the difficulties, road surfaces switched constantly from asphalt and potholed roads to rubble tracks. When Paul Köppen and Ernst Henne won Europe's most challenging race no less than three times for BMW in the 1920s, they did it on motorcycles that were not even specifically set up for off-road use. The only modification their machines enjoyed over those of their road-racing brethren was a spare wheel strapped to the rear, giving at least a degree of off-road independence. For, once the riders left the major towns and transport routes behind, the roads they encountered were in a far worse state of repair than any carefully prepared race track. A photograph taken during the Pan-Russian Reliability Trials of 1925 gives an accurate impression of the conditions riders faced, with the competitor Machurin steering his R 32 through a provincial town ankle-deep in mud.

**The legendary Six Days Trials.** At about this time a programme of special off-road events became firmly established on the motorsport calendar. The most important of these – inaugurated in 1913 – was the International Six Days Trial (ISDT), an event that by the 1920s had acquired enormous prestige. It tested the riders' ability to master difficult off-road terrain against the clock, and although absolute times were of secondary importance, severe penalties

were awarded to any rider overstepping the target time. The Six Days Trials attracted the international motorcycling elite, almost all of whom had already earned reputations in road race events.

That a relative newcomer to the motorcycle industry like BMW should want to pit itself in off-road competition against the pick of the motorcycle crop was therefore understandable. The best BMW motorcycle in 1926 was the R 37, the first ever BMW sports model, developed by Rudolf Schleicher. Schleicher was not only a gifted engineer, however, he was also a passionate racer in his younger years. So what could have been more natural than to enter as a private rider the 1926 International Six Days Trial, staged that year in Great Britain. Unlike his fellow competitors Schleicher did not have the advantage of off-road tyres, yet in spite of this the rookie rider pulled off a dramatic coup, completing each of the six days without amassing a single penalty point. Schleicher's reward was one of the highly prized gold medals handed out only to riders finishing without penalty points. BMW also benefited from Schleicher's success, however, since widespread press coverage of the event made the young motorcycle brand from Munich almost a household name overnight.

**New models for off-road riding.** The new pressed-steel models introduced in 1929 were the first to incorporate the use of ▶



Left | Road or cross-country? Machurin riding a BMW R 32 at the 1925 Russian Reliability Trial.

Facing page | Machurin's silver medal gets a mention on a Russian BMW poster dated 1930.

specialist materials. The spot welds that held together the tubular frames of the old flat tank models had shown weaknesses under extreme loads. So while the lighter tubular frame continued to find favour in road events until well into the 1930s, the extra weight of the more solid, more robust pressed-steel frame was preferred for its off-road reliability. The new BMW models started for the first time in the 1931 International Six Days Trial staged in the Italian Dolomites. On this occasion BMW was not only represented by solo riders. The national team also included Ernst Henne and the sidecar combination of Josef Mauermayer and Ludwig Kraus, with Julius von Krohm on a Zündapp filling the remaining team place. For the national standings each country was required to nominate two solo riders and a sidecar combination, and riders and machines had to originate from the applicant country. In effect, therefore, the competition was the unofficial European Championships for off-road racing and of enormous prestige value.

Off-road trials in general enjoyed a very high profile during the period. The most popular and influential motorcycling publication of the day, the British Motorcycle magazine, published detailed accounts of every international event, with ISDT events filling many column inches with in-depth analysis over several issues. This put the International Six Day Trial on a par with the Tourist Trophy on the Isle of Man, the most popular road race of the day. Unsurprisingly, it also attracted a first-class field of riders, and with the spotlight of media attention trained on them for almost a whole week every participant harboured lofty ambitions.

**International reputation.** At the 1931 premiere the BMW riders and their BMW R 16 sports models put up an excellent showing. They completed the six days without amassing any penalty points and earned a gold medal for their efforts. In the overall standings, however, the team could only manage second place behind the penalty-free Italians, as von Krohm unfortunately picked up two penalties. Nevertheless, this runner-up position was the best result to date achieved by a German team. Moreover, Henne and the sidecar team of Mauermayer/Kraus had proved beyond doubt that the BMW R 16 was more than equal to the toughest of challenges, whether as a solo machine or in a sidecar combination.

The following season, Joseph Stelzer, twice German road champion for BMW in the 1920s, took von Krohm's place, making the national team a purely BMW affair. Stelzer fitted well into the outfit, finishing – like team-mate Ernst Henne – without any penalty points. But winning this type of competition also involved an element of luck, as Mauermayer and Kraus discovered to their cost. When serious damage to the wheel of their sidecar brought

a 36-point penalty, their dreams of overall victory receded into the middle distance. Germany could only manage the third spot – respectable enough under the circumstances, but well behind England and Italy.

**Historic victory.** The slice of luck that had evaded the German team in 1932 was returned to them in Wales in 1933. Defending champions Great Britain were once again favourites, particularly in view of the fact they were racing on home soil. But Germany fought their hosts tooth and nail, and after two days of competition the teams were level at the top of the standings with no penalty points. On day three, however, the outcome of the overall trial would be decided by two significant twists in the plot. First, Ernst Henne suffered a puncture which, in accordance with the regulations, he repaired without assistance. This cost him 20 minutes, since one penalty point was added for every minute or part minute over the fixed time. Suddenly, the team's prospects of winning seemed as good as ever. But Henne rode the remaining distance as if his life depended on it, gradually clawing back the minutes, until at the final control of the day he was just 40 seconds outside the mark. The second significant event – also on the third stage – struck the British team, when Rowley riding an AJS took a wrong turn in heavy rain and picked up two penalty points. As neither team made any further errors over the remaining three days, the points tally remained unaltered: Germany had won its first International Six Days Trial. The team returned to Munich to a heroes' welcome and even BMW's General Manager Franz-Josef Popp attended the victory parade through the city's streets. Naturally BMW exploited this success to promote its motorcycles. When the company introduced the R 4 it was hailed as "the German motorcycle for German roads." From 1934 onwards the R 4 was also given the tag "off-road sports" and sold as a competition motorcycle particularly suitable for the amateur – light and manoeuvrable, yet sturdy and reliable. In national events such as the German Three Days Harz Trial, the single-cylinder model seemed in its element, with BMW works riders bringing home one gold medal after the other. And the unparalleled motorsport career of Georg Meier also began in off-road events on a BMW R 4.

However, in terms of off-road activities the company's attention for the 1934 season was naturally focused on the defence of the ISDT Trophy. Having won the title the previous year, Germany now enjoyed home advantage and the event was staged near Garmisch-Partenkirchen in the German Alps. The national team was unchanged for the event, save for a set of new, bright white overalls. The motorcycles, on the other hand, underwent an inter- ▶

**ФИНИШ**



# БМВ

САМЫЙ БЫСТРОХОДНЫЙ  
МОТОЦИКЛ МИРА  
216 КМ. В ЧАС.

САМЫЙ НАДЕЖНЫЙ  
ТОВАРИЩ ДАЖЕ НА  
ПЛОХИХ ДОРОГАХ.

НА ВСЕСОЮЗНОМ ПРОБЕГЕ  
1925 ГОДА НАГРАЖДЕН  
СЕРЕБРЯНЫМ КУБКОМ

РЕКОРД  
ДОЛГОВЕЧНОСТИ.

ТОЧНОСТЬ И  
ТЩАТЕЛЬНОСТЬ  
КОНСТРУКЦИИ  
ОБЕСПЕЧИЛИ УСПЕХИ  
БМВ.

СКОРОСТЬ И ТОЧНОСТЬ  
ВЕДУТ К УСПЕХУ.



esting modification. Instead of the leaf springs common to all BMW motorcycles since 1923, front suspension was now provided by a telescopic front wheel fork with hydraulic damping.

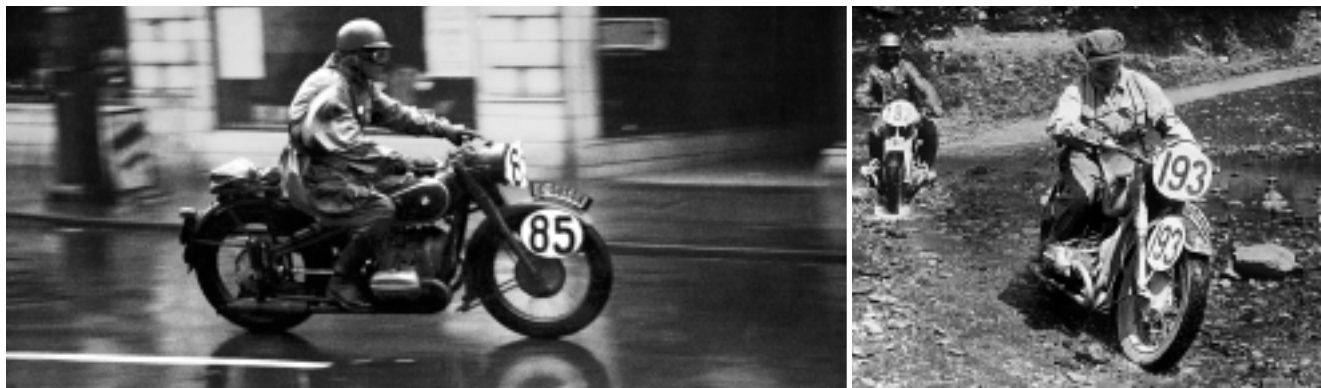
**From competition to serial production.** With development work virtually complete, BMW's plans to transfer the telescopic front fork to serial production were already well advanced. Competitive racing now provided the ideal opportunity to subject the design to final testing – and what more suitable event than the six-day marathon over poor roads and punishing off-road terrain. In addition, participation in the ISDT guaranteed coverage in the international press, which meant free publicity both at home and abroad.

The modified R 16 models took the six-days punishment without complaint, and the team of Henne, Stelzer and Mauermayer/Kraus once again showed collective class, completing the six days with no penalty points. But the Italians also finished penalty-free and the home team only managed to nail the victory in the very last race. After six days of competition the overall standings were decided by a margin of just six and a half seconds. With this successful defence of the title BMW had finally established itself as a major player in international off-road competition. At the same time hardly a report in the media omitted to mention the innovative front fork, and when this was transferred to serial production the following year in the R 12 and R 17 – a first for a production motorcycle – both the BMW publicity machine and the specialist press picked up on the technology transfer between motorcycle racing and serial production. In 1935, when the Six Days event was once again held in Germany, BMW took a new approach. Whereas in every previous season the company had started with series models that had undergone a greater or lesser degree of modification, this time it pinned its hopes on a completely new development – a thoroughbred racing machine. The engine was a 500 cc compressor unit with a vertical shaft controlling the valves – another first for BMW. The output of 40 bhp was more than adequate for off-road use. Suspension, too, was entirely new. Instead of the sturdy but heavy pressed-steel frame, the motorcycle featured a welded double loop tubular frame. Thanks to an innovative inert gas electrical welding process, the engineers had successfully overcome the problems encountered in the 1920s by weak spots on the soldered frames. The front wheel retained the tried and tested telescopic fork with hydraulic damping, the rear wheel had no suspension as before.

**Success with compressor technology.** Developed primarily with road racing in mind, the innovative new engine was soon given the chance to prove itself in the off-road environment. Having come through the dress rehearsal at the Three Day Mountain Trial in June, two months later the machine faced the altogether more demanding challenge of the 1935 International Six Days Trial. And in order to minimise the chance of victory or defeat being settled by a stroke of ill fortune as in previous years, the organisers decided to make the 1935 course even tougher than usual. One change was made to the BMW team: for the sidecar pairing Ludwig Kraus switched from sidecar to rider, and Josef Müller was drafted into the sidecar seat. The mountainous terrain near Obersdorf made huge demands on the riders, but nevertheless Henne and the Kraus/Müller pairing came through without penalty. Joseph Stelzer, on the other hand, finished with a tally of 25 penalty points. But the result was good enough to secure the overall title once again, since the circuit – universally acknowledged to have been the toughest ever – took its toll on all the teams. Runners-up were the Czechs with 66 points, and in third place came the British team, having accumulated a massive 401 penalty points. Now with three consecutive wins under its belt, BMW had firmly established its image as a sporting brand. More importantly, such success was the best publicity BMW could have hoped for and an excellent advertisement for German off-road events in general. The number of those taking interest in the sport was continuing to grow, and the slightly modified BMW series models gave riders an opportunity to enter regional – or even national and international – events with a competitive machine for a relatively small financial investment. Even though the team was unable to defend its three successive titles in 1936 – finally yielding the crown to the British riders – the International Six Days remained a source of good publicity. With a tally of 22 golds, 6 silvers and 4 bronze, BMW still dominated the medal standings, and many of the younger generation of drivers – notably the trio of Josef Forstner, Fritz Linhardt and Georg Meier – became celebrities in their own right. These three policemen, who caused such a sensation riding the R 4, were known everywhere as the “men of iron”.

In 1936 another BMW innovation made its debut at the Six Days event – straight-travel rear wheel suspension. The fact that this premiere passed largely out of the glare of public attention was due to the reservations the national team had expressed about the innovation and its decision to stick with the tried and tested rigid

Below | Rear wheel suspension proves its worth on and off the road at the International Six Days Trial of 1937: Josef Stelzer (left) and Josef Forstner.







Above | Josef Stelzer riding the BMW R 17 at the 1936 German Mountain Trial.

frame from the previous season. Consequently designer Alexander von Falkenhausen had no choice but to test his pioneering rear suspension at the ISDT himself. Falkenhausen, who had ridden bikes competitively in his youth, successfully brought his modified BMW R 5 home without penalty to take a gold medal. To fellow riders and members of the press alike Falkenhausen waxed lyrical about the “comfortable ride” he had enjoyed. Such effective self-publicity ensured the BMW works team also switched to rear wheel suspension the following season – for both off-road and road events. Rear wheel suspension also made its debut in production models from 1938. Of course, in sales brochures for the R 51 BMW made ample reference to the suspension’s “thorough and lengthy testing in major off-road competitions” since this evidence of technology transfer from motor sport to production was not only extremely beneficial in publicity terms but also a compelling sales pitch.

**Sport as a servant of politics.** In the mid-1930s the increasing politicising of sport in Germany had a marked impact on off-road competition as well. Hardly an event took place in Germany without a “Hühnlein Trophy” (in honour of the head of the National Socialist Motoring Corps), a “Führer Prize” or some such decoration. Virtually every corner of the German Reich – from the Eifel and Eastern Saxony to the Bavarian Ostmark and Brandenburg – staged and promoted regional off-road events. The racing calendars of those prewar years left no part of Germany unvisited by the motorcycle. In addition, the army held its own competitions, which pitted members of motorcycle relay teams against one another in a selection process to find the best riders to take part in the German Army championships. Such army-organised off-road events certainly helped improve soldiers’ riding skills, but they also had a propaganda effect for the military that should not be underestimated. Germany’s preparations for war began well before 1939.

**Georg Meier’s breakthrough.** The 1936 and 1937 German Army champion was Georg Meier riding a BMW, one of a new generation of drivers who had switched from police force to army.

When illness prevented Ernst Henne from starting at the 1937 ISDT in England, Georg Meier stepped in to make his international debut. With both the German and British teams giving flawless accounts of themselves, the outcome once again hung on the final race. In the event the home team held onto a ten-second lead to take the victory.

But the fastest individual rider was Georg Meier, who was rewarded with a BMW contract as works rider for the forthcoming road season. With a tally of 30 gold medals, BMW was also the most successful brand that season, and the Silver Vase – a junior team competition held in parallel to the Six Days Trophy – went to the Dutch riders, all of whom were on BMW machines.

In 1938 the German team consisted of Meier, his long-time friend Josef Forstner and Rudi Seltsam. Their target in the International Six Days Trial was the Silver Vase. Just one BMW was represented in the national team, ridden by the combination of Kraus/Müller, the solo machines all being lightweight 175 cc DKWs. Although the team failed to take enough points to secure the overall title, the three BMW riders led by Georg Meier did well enough to lift the Silver Vase for Germany.

**1939 Six Days: a farce.** These were years of tangible political change. Where once international sport had engendered a sense of fair play and respect for one’s opponent, now the sporting arena had long been overshadowed by national arrogance. But in 1938 no one ever imagined that that year’s edition of the International Six Days Trial would be the last to end in regular fashion for several years. In September 1939 the ISDT was staged in the vicinity of Salzburg. Many of the foreign participants – and all the British riders – left the event early on learning of Germany’s invasion of Poland. The Six Days race went ahead as planned, however, and Germany celebrated victories in every class – although the standings were later nullified by the FICM, the sport’s international governing body. The first postwar staging of the International Six Days Trial was in 1947. No German riders were to take part, however, until 1951. ■

BMW has been setting standards in telemetry for 25 years

# From Formula One to production cars

Formula One in the early 1980s: turbo technology has just been introduced and speeds are high. New ways have to be sought to achieve development goals more rapidly. In 1983 BMW becomes the first turbo world champion. One success factor was telemetry. Data transmission from the moving race car to the pits is taken for granted in Formula One today. In 1980, BMW had been the first company to introduce telemetry to the race track – and was subsequently the first to introduce the same principle to meet the very different demands of production cars in 2003. Customers today benefit from data transmission from the moving car straight to the workshop.

Niklas Drechsler





Back in 1980, development of the turbo-charged Formula One engine was in full swing. But to maintain the pace of development it was important to be able to obtain data directly from the moving vehicle. The engineers were keen to work out a way of remotely monitoring engine performance as accurately as they would on a test bench – but while the racing car was in motion. Engine project manager Paul Rosche had heard that the aerospace company MBB (Messerschmitt, Bölkow, Blohm) was already using a system for aircraft testing that relayed information by radio directly to a measuring station, so he contacted the company with a view to using the technique for his cars.

At the first major meeting that took place between representatives of BMW, MBB and Brabham on 2 July 1980, it was agreed that a proposal would be put forward by 8 July. From then onwards things moved fast, and by autumn a remote monitoring system was up and running and being used for testing. At BMW's request, MBB even provided an engineer to help operate the equipment. An eight-channel radio transmission system jointly developed with MBB enabled all the required data to be relayed from the moving vehicle to a stationary bus parked next to the race track, where it was recorded for analysis. It was the first really accurate method of monitoring, recording and evaluating data during vehicle operation, and enabled the engineers to directly observe the impact of modifications on engine performance. Initially the data came as a paper printout; it was only at a later stage that a data storage device was designed that could record all the information for up to three minutes – the time

it took for the vehicle to complete a circuit of the race track.

**What sort of data was collected and transmitted?** The system collected information on engine and turbocharger speed, boost pressure, charge air temperature both upstream and downstream from the turbine, oil pressure, oil temperature, accelerator position, coolant temperature, ambient temperature around the engine and turbocharger, and pressure readings before and after the intercooler. By 1985 a number of other important readings had been added – for example exhaust back pressure, which had appeared at an early stage on the engineers' shopping list. But before this could happen, a sensor had had to be invented that was rugged enough to withstand aggressive exhaust gases and provided reliable readings at pressures that could rise to 5 or 6 bar. Other readings that now also became possible included fuel temperature and wastegate upper chamber pressure.

**What information did such telemetry systems supply?** The telemetry system yielded important information for further development of the injection and ignition systems and reduction of fuel consumption, as well as providing data on the effectiveness of the intercooler. Reducing fuel consumption was a priority right through to the mid-1980s and beyond. An official press release from 1984 explained why: "Using the formula 'force equals mass times acceleration', improved performance on the race track means higher fuel consumption. But higher consumption means higher weight (more fuel on board) for long

Below left | A silver casing conceals the transmitter inside the car.

Centre | Fine-tuning the receiver in the data van.

Right | Analysing printouts of the data received.





Above | Numerous tests increase the chances of winning.

periods and this therefore calls for improved performance. There is only one way of escaping this vicious circle, and that is to reduce consumption.” By the winter of 1981, excessive consumption featured at the top of the list of problems that urgently needed to be solved. And by summer of the same year, the first tests were taking place – in Silverstone and Brands Hatch amongst other places, so as to get results from both fast and slow race tracks. At Brands Hatch, clutch testing during standing starts was also carried out.

In a bid to reduce consumption, turbochargers of varying sizes were compared – initially in static tests on test benches but later on moving vehicles. Thanks to telemetry, such practical tests yielded useful additional information. From the outset, the BMW Formula One engine used a high-pressure injection system, as it offered better atomising of the fuel stream and shorter injection times than the low-pressure systems used on conventional vehicles. Nevertheless, in the mid-1980s it was decided to make a comparison of high and low-pressure injection systems during test runs – once again with an eye to reducing fuel consumption.

Another focus of track testing was engine response – one of

the great drawbacks of turbocharged engines at that time. There were limits to what one could achieve in this respect using static testing: an exchange of memorandums indicates that it was not possible to use the test benches available to BMW at the time for monitoring engine response during certain load alteration phases, so testing had to take place on a moving vehicle. One of the aspects investigated during testing of load response was the impact of various types of turbochargers and different boost pressures.

Another factor measured was the influence of different ignition angles on engine response. The impact of ignition retard during gear changes was also tested on various occasions during 1981. Engineers saw this as a way of boosting acceleration at engine speeds of between 6,000 and 7,500 rpm. Other aspects that were tested included how the engine responded under acceleration from overrun at various engine speeds or from various different constant speeds, and whether the fuel supply was actually interrupted during overrun.

The telemetric data also provided important information for assessing engine durability. For example, the engineers were able to check the precise speeds at which engines operated. This also ►

made it possible to improve, step by step, the effectiveness of the engine speed limiter.

**Pioneering digital engine management.** Telemetry also made an important contribution towards the development of the entire engine management system. Evaluation of the telemetric data provided the basis for the long but important process of developing digital engine electronics for racing cars. Not only that, but it also provided the BMW engineers with a means of persuading Bosch to develop fully-fledged ignition and injection management systems. An official BMW press release from 1984 sums up the pioneering role the company played:

“Parallel to series car production, where BMW is the only manufacturer to have been working for some time with systems that precisely match the ignition timing with the injection quantity, BMW has also introduced this method to racing cars.” In other words, on both road and track, BMW was the first manufacturer to introduce digital engine electronics in collaboration with the company’s development partner, Bosch.

But as a supplier of engines, BMW Motorsport went even further than this. Brabham’s chief designer Gordon Murray was offered the opportunity to use the telemetry equipment for chassis testing as well. It was agreed, for example, that the pressure and temperature of the brakes would be monitored.

**Teething troubles.** Other teams were quick to recognise the advantages of telemetry and began to follow suit. But problems soon began to crop up. When Brabham BMW and Renault started using the Le Castellet race track simultaneously for tests, both teams found they were suffering signal interference, and a timetable had to be drawn up to determine which team was allowed to use telemetry at what times. The problem was resolvable, but caused considerable headaches for a while. An exchange of notes that took place in the summer of 1982 reveals

that the Lotus team had to ask BMW Motorsport what frequency they were using so that they could avoid it when installing their own telemetry equipment. Another problem for the teams was the question of transmission licences. In virtually every country in which the equipment was used, a telecommunications licence had first to be acquired.

Initially there were also some problems because the telemetry system suffered interference from other electronic components in the racing vehicles, but this was solved by a combination of cable screening – for example on the ignition system – and the use of a separate 12 volt battery that isolated the telemetry system from the rest of the vehicle’s on-board circuitry. Vibration must also have been a problem. From March 1981 onwards they started using elastic attachments when the telemetry box was installed in the vehicle.

To ensure accuracy of the measurements, special calibration was also necessary. The minutes of meetings held in November 1980 indicate that a number of further measures were also needed to improve the quality of the data. These included a radio link being set up to the driver in order to be able to give him more precise instructions, data being stored on tape, and more time being allowed for setting up and calibrating the equipment. By the end of 1980, preparation of the engine and telemetry system for a test drive was taking a full two days.

**Telemetry in today’s Formula 1.** Nowadays, Formula One technology is advancing at such a speed that telemetry has become essential. The pit now receives some 5 MB of data from the engine and a further 5 MB from the vehicle for every circuit of the race track. Nor is it just a one-way process – data is transmitted to the vehicle as well as being received from it, though the Formula One regulations already today ban this, once again confining telemetry to sending data from the vehicle to the pit.

Below | Precise data make for rapid progress.





Above | The first test cars clearly displayed the long data transmission aerial.

Below | Final tweaking of the transmission electronics before a test drive.

#### Formula One ideas used in series production. A

similar idea has now been taken up for series-produced conventional cars. Here, too, there is a need to transmit data from the vehicle – in this case to the dealership. As in 1980 at the race track, BMW was again the first brand to introduce this innovation to production cars. Its TeleService, introduced in 2003, enables customers to make similar use of the advantages of data transmission.

Of course the owner of a series-produced car equipped with mature technology has rather different requirements to the driver of a racing car. What happens is this: 2,000 kilometres before the next service is due – just when the service interval display switches to yellow – TeleService (with the customer's permission) sends servicing data from the vehicle to the workshop via mobile telephone. The workshop then rings up the customer to arrange a service appointment. The information that has been transmitted from the vehicle enables the service adviser to assess how long the process will take and what needs to be done, and he can also order up the necessary spare parts in advance.

Theoretically, any owner of a new BMW 1, 3, 5, 6 and 7 Series model can use TeleService. All that is required is the Professional navigation system and a Bluetooth-enabled Professional carphone. ■



The architect of recovery

# Dr Karl-Heinz Sonne

The appointment of Karl-Heinz Sonne formally gave the BMW company a chief executive for the first time since the end of the Second World War. During his brief term of office from 1962 to 1965, he pushed through a series of organisational changes and strategic decisions which left a lasting impression on the business.

Dr Florian Triebel

The restructuring of BMW AG following the General Meeting on 9 December 1959 led only a few months later to its first successes. A small car, the BMW 700, effectively carried the company through the years 1960 and 1961. Not until 1962 did the BMW 1500, the long-awaited and sporty “BMW mid-range car”, reach the market. Until the beginning of 1962 the company had been led by an ad hoc management committee without an official chairman of the board. Yet since the spring of 1960 Ernst Kämpfer (see MTL 03/2005), with responsibility for finance, administration and purchasing, had been the “chief executive” of the company in all but name.

The positive reaction to the launch of the BMW 1500 at the Frankfurt Motor Show in September 1961 made it clear this vehicle would be a great success. For this reason it seemed essential to reorganise responsibilities on the Board of Management. Initially the perfect candidate for the post of Chairman of the Board seemed to be Ernst Kämpfer, who since 1960 had done a great service to BMW in the negotiations over restructuring. He himself doubtless held out great hopes of getting the job. However, the new major shareholder, Dr Herbert Quandt, opted for a different solution. Instead of the experienced Kämpfer, who knew the company inside out, he put forward Dr Karl-Heinz Sonne for the top job at BMW – a manager from one of the other companies in his industrial group.

Sonne was born in the Ruhr city of Bochum on 3 June 1915. After his school years he studied at the Wirtschaftshochschule, a business college in Berlin. There he graduated with a degree in commerce and only a few months later obtained a doctorate in economics. After this, he joined the Berlin power station holding company Gesellschaft für Elektrische Unternehmungen (Gesfüel for short), with





Facing page | Portrait of Karl-Heinz Sonne.

Right | The Board of Management congratulate Sales Director Hansel on his birthday. From left: Paul Hahnemann, Wilhelm Gieschen, Ernst Kämpfer, Karl-Heinz Sonne and Ludwig Hansel.



the title of Assistant to the Board, though in fact he was a trainee salesman. Later he moved to the Norddeutsche Kabelwerke in Berlin and then to the Isar-Amper-Werke in Munich.

From May 1940 to December 1943 he served in the army, first as an official receiver in Berlin and then as a price-checker in the Wehrmacht Supreme Command. At the beginning of 1944 he was released from war service in order to work for the Quandt Group. In October of the same year he was appointed commercial manager of one of the group companies, Concordia Elektrizitätswerke (CEAG). Despite the ending of the war, Sonne kept this job and rose swiftly to the top of the management hierarchy. He first joined the Concordia management board in 1948 and was appointed chief executive in 1956. He built CEAG up to be one of the leading companies in electrical wholesaling and the largest manufacturer of filters and dust extractors in continental Europe. He stayed in this post until he joined BMW.

**A sensational début.** The transfer to the Munich carmaker did not go off entirely smoothly, though at first it seemed that everything was following its appointed course. Sonne took up the post of Chairman of the Board of Management on 15 February along with responsibility for the general administration and purchasing departments. However, on the day before the Annual General Meeting in August 1962, the Chairman of the Supervisory Board, Professor Alfons Wagner, resigned from his post and announced that he could no longer accept the “usurping” of official business by the major shareholder, Herbert Quandt.

What had happened? After the successful first steps towards restructuring the BMW business, the new major shareholder, who initially had not himself taken up a seat on the Supervisory Board, had from time to time invited the entire Management Board to meetings in Bad Homburg. The minutes of these meetings had been passed on to the Supervisory Board. What is more, as early as 1961 Quandt had already – virtually without consulting anyone – installed two of his nominees on the Management Board: Wilhelm Hermann Gieschen on the technical side, and Paul G. Hahnemann in charge of sales. Now, by proposing Karl-Heinz

Sonne as Chairman of the Board, Quandt had, in the view of Supervisory Board chairman Alfons Wagner, gone one step too far. Wagner asserted that, as head of the monitoring committee, he was obliged to protect the interests of all the shareholders. And he now saw the rights of small shareholders under threat from the major shareholder, even though he had been asked by Quandt himself to take up the chairmanship. At the Annual General Meeting the following day, Wagner’s resignation and the top management situation were debated heatedly and at length. However, public opinion seemed to be broadly unanimous: if only BMW, during its years of crisis in the 1950s, had had a decisive industrialist pulling the strings behind the scenes, then the company and all its shareholders might possibly have been spared all the upheavals, losses and restructuring measures. In the final analysis, this had no serious consequences for Sonne. In the end he was confirmed in his office by the shareholders’ meeting, and the auditor, Dr Hans Karoli, took over as Chairman of the Supervisory Board. Ernst Kämpfer, who until then had more or less run the Board of Management, was obliged to take a back seat. Despite this disappointment he was persuaded to renew his contract of employment.

**The tasks facing the new Chairman.** First of all, Sonne had to organise production of the new BMW 1500 and the upgraded BMW LS, while keeping down re-tooling and start-up costs. This proved to be no simple task, since there was a big initial demand for both cars and consequently a series of production re-jigs were necessary in order to provide the sales division, as far as possible, with the required number of units of these two models. Then, when quality defects emerged soon after the introduction of the BMW 1500, further technical changes were called for. In 1963, first the bigger-engined and more sophisticated BMW 1800 was launched, followed in 1964 by its sporty companion, the BMW 1800 TI, which was soon being hailed by the press as a “thoroughbred for the family man” and an “understatement in silver-grey”. The BMW 1500 itself was swiftly taken out of production and replaced in 1964 by the BMW 1600. ▶

Until then Sonne had had little experience of the specifics of running a car business. In order to deepen his knowledge he had no qualms about letting himself be initiated into the most important processes in the development departments. His frequent and lengthy visits to the boffins soon earned him the title of “BMW’s most expensive apprentice”.

This form of training helped him in what was really his principal assignment. As well as realigning the product range in 1962, Sonne had to turn his attention to organisational matters and to reshaping the whole procurement area. It appeared to the Supervisory Board and to Herbert Quandt, the chief shareholder, that here lay a great deal of unexploited potential for reducing the burden on the company’s cost structure and finances. To this end Sonne set up a new 12-man staff department which, under the watchword of “value analysis”, was to go through the whole company with a fine-tooth comb. Specifically the team were to analyse expenditure on the production models and look out for anything that could reduce manufacturing costs. The “value analysts” did indeed succeed in uncovering all manner of unnecessary cost generators. Some of these could be dealt with by simple and quickly implemented measures. For example, on the large saloons they replaced the solid metal trim strips with hollow ones, thereby not only saving money but also reducing the weight of the heavy cars. But the cost controllers did not stop their work at the factory gate. They included suppliers and subcontractors in their analysis and here too they introduced more rational procedures and technical improvements in production – all of which ultimately had a beneficial effect on BMW’s purchasing costs.

**Reorientation of the product range.** The great success of the “mid-range” cars, the BMW 1500, 1600 and 1800, which soon became designated the “New Class”, necessitated repeated rescheduling of the production programme agreed at the beginning of each year. In addition to the successful new models, the workforce

in the Munich factory continued to turn out large saloons, as well as the smallest car in the range, the BMW 700, and the current motorcycle range. Space in the factory became increasingly tight. Analysis of the sales figures showed that the prestigious big saloons made only a small contribution to company profits, which meant that space occupied by their production line was giving a very poor return on capital. For this reason, at Sonne’s recommendation, the Supervisory Board decided in 1964 to close down this product area.

However, the decision to introduce a “small mid-range” car into the production programme once again led to an acute shortage of space in the plant. For this reason, the Management Board, under Sonne’s chairmanship, had a number of discussions about opportunities and alternatives for production. Here too, an older product area had finally to make way for the new model. In the circumstances, the Board decided against commissioning a successor for the BMW LS Luxus and thus no longer to cater for the small car segment of the market.

With this decision the BMW car portfolio was systematically pointed in a new direction. Market and customer studies commissioned by sales director Paul Hahnemann showed that what customers in the early 1960s expected from BMW were sportily designed mid-range cars, not exclusive saloons, and not low-budget small cars either. It was very clear how strongly the image of the marque and its products from the 1930s had persisted in its effect. The large saloons, manufactured from 1951 onward, had been unable to uphold BMW’s brand image in the long run. By abandoning the manufacture of both large and small cars, the company, under Sonne’s leadership, adapted its range of models in accordance with the market research results. Initially the range consisted of cars of the “New Class” and the “02 Series”, as the smaller mid-size cars were now designated. In this way the BMW company laid the foundations of a product structure that still holds good today.

Below left | Members of the Board inspecting a new production hall. From left: Paul Hahnemann, Karl-Heinz Sonne and Wilhelm Gieschen.

Below right | Sonne (left) in conversation with Herbert Quandt (centre) and Kurt Golda.





Above | BMW dealers collect the first BMW 1500 demonstrators from Munich.

In order to finance this reorganisation the company needed money. However, the banks let it be known that the funds they were prepared to make available had been more or less exhausted in the first years of reconstruction after the company's crisis. In this situation Sonne could only see two possibilities for providing the company with the funds necessary for the planned growth. On one hand he succeeded in consolidating the company's liabilities by raising a borrower's note loan. The important factor here was that he was able to convince the men from the Bavarian State Office for Reconstruction Finance to guarantee long-term financial backing for the BMW company.

**Withdrawal from a traditional business.** By rescheduling debt in this way, Sonne had taken the first successful step towards securing BMW's medium-term prospects. However, it seemed that over this period one business activity would be a burden. As part of the reconstruction in 1960, the Allach plant, which since 1955 had concentrated on building aero-engines, had been put into a joint venture with MAN AG. Because of its desperate business situation during the negotiations, BMW had found itself in the weaker position. This meant that the BMW delegation were forced to concede that their partner, MAN, would take over the operational management of the joint company. In the early years of the collaboration it became clear that the objectives of the partners did not coincide. Disagreements soon flared up, especially on the question of the application of profits. Lengthy negotiations to clarify responsibilities and over the possibility of revising the agreement ran into the sand.

In this unsatisfactory situation, Sonne introduced a new initia-

tive. He offered MAN the chance to buy BMW's shares in the aero-engine business. In doing so, Sonne aimed not only to raise funds to finance the expansion of carmaking, but also to focus BMW's capacity and resources on the more promising core activities of four-wheel and two-wheel motor manufacturing. But at the same time he was heralding the end of an era. Since its foundation during the First World War, BMW had been an aircraft engine business that also developed, built and sold cars and motorcycles. With the ultimately successful sale of its shares in BMW Triebwerkbau GmbH in 1965, BMW withdrew from what for many years had been its traditional business and concentrated its activities in the fields of cars and motorcycles.

Sonne had implemented two of these decisive steps towards the reorientation of BMW in the face of strong opposition from Herbert Quandt. The major shareholder had voiced his concerns both about the closing down of big saloon car production and about the sale of BMW's shares in BMW Triebwerkbau GmbH. However, in both decisions he had given the Management and Supervisory Boards a free hand.

**From Munich to Cologne.** Nonetheless, it is possible that the relationship between the Chairman of the Board and the major shareholder suffered as a result. At all events, after scarcely three years at the head of the BMW Management Board, Sonne accepted an offer to become chief executive of Klöckner-Humboldt-Deutz, the heavy vehicle manufacturers, and moved to Cologne. After ten years in the post, he moved in 1988 to a seat on the Supervisory Board of that company. Karl-Heinz Sonne died on 2 November 1997 at the age of 82. ■

# BMW Museum Online Special

The New BMW Museum has gone online more than a year before it opens. With its special online issue released late February, BMW Group Mobile Tradition has added another building block to the media campaign for the New BMW Museum.

The concept and design, as well as initial glimpses of the interior of the museum, are presented in detail on the internet at [www.bmw-museum.de](http://www.bmw-museum.de). As seen in the images shown here, the museum concept reflects the fascinating appeal of the BMW brand. The focus is on dynamics, sportiness, elegance and fascination. Across an exhibition space of some 5,000 m<sup>2</sup> visitors will be able to enjoy a unique overview of cars, motorcycles and aircraft engines. Around 100 original exhibits will provide eloquent documentation of the route BMW has gone down from 1916 to the present day. Among the exhibits are such cult cars as the BMW Isetta and BMW 2002, along with the le-

gendary BMW 328 and 507 roadsters. BMW motorcycles will also find their niche in the New BMW Museum, which will showcase, among others, the very first BMW R 32 of 1932 and the BMW R 26.

## **Intriguing exhibition composition.**

Vehicles, themes, architecture, décor and media design will complement each other to create an impressive exhibition composition, with the company's design and engine competence being graphically documented. Modern façades, interlinking paths and fascinating lines of sight in the interior of the New BMW Museum will generate a lively urban setting. The museum is designed

Below | Dynamic architecture.  
The use of innovative media architecture lends movement to the exhibits on display.



as an urban “traffic complex” composed of elements taken from the automotive context, such as streets, squares, bridges and buildings. A central route leads the visitor through time and space and offers scope for staging exhibitions that span several rooms. A seemingly weightless system of ramps links up the 25 exhibition areas. Thematic focuses such as company history, design, technology and motor sport will be complemented by changing exhibitions.

The use of new media will place BMW’s unique exhibits in the limelight, while the media themselves are invisibly integrated into the museum architecture. Choreographed media presentations on the façades serve to dematerialise and dynamicise the static elements, and interactive posts and information levels draw the visitor into the exhibition action. The façades are striking with their large-scale glazed surfaces that lend the exhibition spaces the requisite light.

**Crowd-puller BMW Museum.** With the New BMW Museum, BMW will open up an entirely new chapter in a success story that began in 1973. “Over the last 30 years the BMW Museum has staged five major long-term exhibitions, including ‘Time Signals’ with its references to society, zeitgeist and culture. On average we have recorded more than 200,000 visitors a year, placing us second in the Munich museum landscape behind the Deutsches Museum,” sums up Holger Lapp, Director of BMW Mobile Tradition, adding: “The New BMW Museum will once again set benchmarks for the future.” As part of the new BMW brand experience at the Munich location and in the direct neighbourhood of the BMW head office tower, the forthcoming BMW Museum will certainly draw in the crowds on a national and international level.



Top | The adjacent Pavilion allows for a radical expansion of exhibition space.

Centre | The new-design interior with escalator.

Bottom | Innovative museum architecture and a broad spectrum of exhibition themes such as design, technology and motor sport offer the visitor a unique experience.

## Dates and events

### April 2006



06 – 09 April 2006  
Techno Classica / Essen Exhibition Centre, Hall 12 (Germany)

21 – 23 April 2006  
Concorso d'Eleganza Villa d'Este / Cernobbio (Italy)

### May 2006



11 – 14 May 2006  
Mille Miglia / Brescia (Italy)

25 – 28 May 2006  
30th Internationales Veteranen Club-Treffen 2006 (Germany)

### June 2006



15 – 18 June 2006  
BMW V8 Club Treffen 2006 / Dresden (Germany)

15 – 18 June 2006  
Bavaria Tour 2006 (Oberammergau (Germany)

29 June – 02 July 2006  
Silvretta Classic / Vorarlberg (Austria)

### July 2006



07 – 09 July 2006  
Le Mans Classic / Le Mans (France)

07 – 09 July 2006  
Goodwood Festival of Speed / Goodwood (England)

### Preview Issue 02.2006



- > Motor sport with the BMW 700 RS
  - > The BMW R 100 RS
  - > Founding of the Bayerische Motoren Werke
  - > Profile series: Gerhard Wilcke
- and much more

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