

# Mobile Tradition live

Facts and background



The BMW brand. A story of success. Page 16



- 24 **BMW Motorrad** – passion on two wheels since 1923: Their quality and sporty character rapidly earned BMW's two-wheelers international repute.
- 40 **The "Green Hell"** turns 80: Since its debut race, BMW has been raking in repeated victories on the legendary Nürburgring.
- 46 **The BMW 003 jet engine:** BMW's new aero engine of the 1930s saw limited production on account of the war.
- 52 **The development of CKD manufacture at BMW:** BMW has been exporting cars abroad since the 1950s – dismantled into parts.





## Twofold joy. The new BMW 1 Series.

Less consumption for more driving pleasure.

The new BMW 1 Series now offers a lot more for even less. Such as the four-cylinder petrol engine with High Precision Injection or the 3rd-generation lightweight diesel engine. Both cut the fuel consumption and thus lower CO<sub>2</sub> emissions while at the same time ensuring the best driving experience in its class. They are just part of an intelligent energy management system that includes such features as Auto Start Stop Function and Brake Energy Regeneration, forming a new set of technologies. Since this so efficiently provides more agility with less energy, we simply call it **BMW EfficientDynamics**.

The new  
BMW 1 Series

[www.bmw.com/  
1series](http://www.bmw.com/1series)



Sheer  
Driving Pleasure



Dear Friends of the BMW Group,

As the new Director of BMW Mobile Tradition, I am delighted to present this issue of Mobile Tradition live. Since attending the Techno Classica show in March, I have already gleaned numerous insights into the world of automotive classics – including the Mille Miglia Storica. There's more about this legendary 1,000-mile rally and the winners of the Concorso d'Eleganza Villa d'Este in this issue.

This year our marketing efforts are focused primarily on the BMW brand, which was registered exactly 90 years ago. The company's success is down to the authenticity of the brand combined with its compelling products. The brand's premium character is defined by creative and innovative solutions, an all-embracing dynamic, aesthetics and exclusivity, as well as a sense of social responsibility.

The first ever BMW motorcycle, the R 32 of 1923, was a paradigm of these attributes. It melded individual innovations into an ideal solution which has pointed the way in BMW motorcycle design to this day. Ever since that time, BMW has steadily and systematically expanded its two-wheeled range. 2006 saw motorcycle sales cross the 100,000 threshold for the first time, bringing total sales to more than two million. Read our motorcycle retrospective to find out how this was accomplished.

Another arena of BMW's success is the Nürburgring. The legendary race track was inaugurated 80 years ago – sealed by the triumph of a BMW motorcycle. In this issue we recall the numerous victories on two, three and four wheels which were to follow this blistering debut.

Let's gear up for a feast of exciting and fascinating stories revolving around the brand and products bearing the blue and white emblem.

Read and enjoy!

**Karl Baumer**

Director BMW Group Mobile Tradition

*Below | Safety is paramount at BMW to ensure undiminished driving pleasure. That is why BMW has been offering driver and rider training for two and four-wheelers for 30 years.*





16

34

**From the BMW IIIa to the BMW X3 |** BMW IIIa, BMW R 32 and BMW 520 – what lies behind BMW's product designations?



**The BMW brand. A story of success. |** The BMW company was founded in 1916 and the brand was registered the following year. 90 years down the line it ranks among the most prestigious brands in the world. With its current marketing campaign, BMW Mobile Tradition elucidates the distinctive values and attributes of BMW through its fascinating products, groundbreaking decisions and technical solutions.





46

**The BMW 003 jet engine |** Since its early days, BMW has been among the leading providers of aircraft engines. In order to maintain this position the company turned to a new and highly promising technology in the late 1930s: the development of jet engines. In 1944 it was finally able to present its first jet engine, named the BMW 003. Due to the war, production was limited up until 1945. After the war, the technology of the BMW 003 formed the basis of the construction of the first French and Russian jet engines.

52



**The development of CKD manufacture at BMW |** CKD production at BMW began in the 1950s with the assembly of the Isetta. While BMW initially focused on European and South American countries for its assembly plants, the 1970s saw the Asian region grow in significance.

24



**BMW Motorrad – passion on two wheels since 1923 |** On the anniversary marking 90 years of the BMW brand, we review the history of BMW motorcycles in this issue of MTL. The story began at the Munich parent plant in 1923 and was taken up in 1969 by the Berlin production site. By delivering exceptional quality and countless technical innovations, BMW – though a relatively small motorcycle manufacturer – always managed to hold its own in the market and now enjoys unprecedented success.

40



**The “Green Hell” turns 80 |** One of the world’s most legendary race tracks opened 80 years ago: the Nürburgring. The inaugural race already brought a triumph for BMW, which has since raked in countless victories and championship titles on two, three and four wheels. A look back at the close bond between Bayerische Motoren Werke and the “Green Hell”.

### Other topics

58 Road safety | 30 years of BMW Driver Training

### Columns

- 03 Editorial
- 04 Contents Issue 02 | 2007
- 06 Reviews
- 10 Art prints
- 11 Awards
- 12 Anniversaries
- 62 Dates | Preview | Publication details



Above (from left) | Thousands of visitors thronged Hall 12 of BMW Group Mobile Tradition. Historic BMW motorcycles from every decade were parked on a mock-up road, including one sporting the number 49: the 500 cc Kompressor on which Georg Meier won the Isle of Man Tourist Trophy in 1939. Two into one: the Double-ended Mini Cooper of 1998.

## Films, aero engines and Formula One: 90 years under one roof

**Essen.** Hands firmly gripping the handlebars, a man leans over the famous 500 cc BMW Kompressor motorcycle. He beams at his son: "I've got a lot of historical BMW bikes back in the US," he says. "I love them." The Americans are just two of some 150,000 visitors who flocked to the Techno Classica show in Essen. The 19th edition of this fair for vintage and classic vehicles attracted more than 1,000 exhibitors.

By tradition, BMW Group Mobile Tradition occupied the whole of Hall 12 and presented product highlights from its BMW, MINI and Rolls-Royce brands. The main theme of this year's exhibition was the campaign "90 years of the BMW brand. A story of success." (see article on p.16). A select range of products showcased BMW brand attributes such as innovative strength, design competence, sportiness, precision and quality. Featuring aircraft engines, mo-

torcycles and cars, the exhibition in Essen underscored the power and sheer diversity of the brand.

The brand anniversary was also the focal point of the VIP evening presented by BMW Group Mobile Tradition, whose concept was corroborated by the attendance of more than 300 guests. Visitors were treated to two emotive premieres: the film "Bracing breeze worldwide. BMW 3 Series Convertibles" showed pacy sequences that conveyed the dynamics of the various generations of this model series and whetted the appetite for more top-down driving. The film on "90 years of the BMW brand" similarly played the emotional card to demonstrate the brand's product diversity, its triumphs on the race track, its forward-looking automotive design, the precision and devotion with which the models are produced, all the way to the social commitment to which the company has subscribed. Inter-

Below | The exhibition on the theme "90 years of the BMW brand" pulled in the crowds. In the foreground, the red and black BMW 303 of 1933 and the BMW 327 Sports Coupé in the same two-tone finish.



+++ Review: Techno Classica 2007 +++ Review: Techno Classica 2007 +++ Review: Techno Classica 2007 +++



Above (from left) | As a highlight for fans young and old, BMW Group Mobile Tradition exhibited the latest BMW Sauber F1.07. The BMW Clubs, meanwhile, were showcasing "recent classics", including a BMW M1 Procar Amper. Andy Alexer of the 02 Series Club (left) celebrated his "Friend of the Marque" award together with BMW Z1 Club President Horst W. Breuckmann.

views with leading personalities from the BMW Group shed light on how this extraordinary tradition evolved. Karl Baumer, who was introduced to the guests in Essen as the new Director of BMW Group Mobile Tradition, made his debut appearance in this film. His predecessor Holger Lapp said farewell with a tear in one eye and a smile in the other. After six years with Mobile Tradition, he takes over as head of the main PR communications division.

In a discussion following the film premiere, experts from BMW Group Mobile Tradition investigated the fascination of the brand in depth, drawing lines from the inception and attributes of the brand to its products. For example, one of the objects exhibited in Essen by BMW Group Mobile Tradition was a BMW IV aero engine, which stood for the quality and reliability of the fledgling brand in its early years and with which BMW claimed its first altitude world record in 1919. Another focus of the display in Hall 12 was the innovative strength of the brand, which the Archive experts were able to demonstrate through BMW's heritage. Among the exhibits was the tubular space frame of BMW 328 Kamm Racing Saloon, the BMW Turbo test bed, Europe's first hydrogen-powered automobile, the BMW 520 and the K1, the first motorcycle to boast digital engine technology along with a controlled three-way catalytic converter.

The discussion among the experts in Essen left no doubt that BMW has from the very beginning ranked among the world's sportiest brands. The racing models on show – ranging from the BMW 328 "Berlin-Rom" Touring Roadster and the 1986 touring car championship-winning M3 all the way to the BMW 320i WTCC 2005 and the latest Formula One racer, the BMW Sauber F1.07 – were a surefire magnet for thousands of visitors. The sporty side of the brand was also reflected on two wheels by the BMW R 68 and the BMW WR 750 of 1929.

A further exhibition showcased the history of BMW 3 Series Convertibles, which BMW Mobile Tradition is supporting with its "Bracing breeze worldwide" campaign. It kicked off with one of the earliest forerunners, the BMW 315 Cabriolet-Saloon of 1934, and progressed via the BMW 320 Baur Topcabriolet to the first M3 and all the way on to the third-generation BMW 328i Convertible. The very latest model is the BMW 3 Series Convertible unveiled in spring of 2007, which perpetuates this successful tradition with its distinctive design and powerful six-cylinder engines.

16 BMW Clubs presented the multifaceted BMW product palette mainly through models that come into the category known as "re-

cent classics" – ranging from the "New Class" to the 630CS. The Baur TC Club added to the BMW 3 Series Convertible display a BMW 325iX Baur TC2, while an M1 Procar Amper augmented the line-up of the "90 years of the brand" exhibition. This year's Techno Classica also saw a club member receive a distinction: as part of the VIP evening Andy Alexer of the 02 Series Club was presented with the "Friend of the Marque" award.

At the other end of the exhibition hall, BMW Group Mobile Tradition had teamed up with the MINI Clubs and Rolls-Royce collector Hans-Günter Zach to present a select range of models from these brands. Among the MINI cars on show was a one-off that was built by a MINI development team from Britain and caused quite a sensation: the Double-ended Mini Cooper consists of two Mini Cooper front ends but has just one engine. The car can be driven in either direction, but all four potential occupants have a task to fulfil: one changes gear, the other steers. Teamwork is of the essence.

There was little doubt that the two Rolls-Royce models on display were once again among the most beautiful and impressive vehicles of the entire show. Even 100 years after the first Silver Ghost entered the market, these regal automobiles have lost none of their allure. On display were the 40/50 H.P. Silver Ghost Coupé de Ville of 1920 and the 40/50 H.P. Silver Ghost Torpedo Tourer of 1923. ■

Below | Some 300 visitors attending the VIP event experienced an entertaining evening with two film premieres and interesting conversations.



+++ Review: Villa d'Este 2007 +++ Review: Villa d'Este 2007 +++ Review: Villa d'Este 2007 +++



Left | Winner of the Trofeo BMW Group: the Mercedes-Benz SSK of 1930.

Below | The Concept Coupé Mille Miglia 2006 was unveiled before the public for the first time at Villa d'Este.

## Concorso d'Eleganza Villa d'Este 2007 – straddling past and future

**Munich/Cernobbio.** The 2007 Concorso d'Eleganza Villa d'Este, held for the ninth time under the patronage of the BMW Group, featured numerous winners – foremost among them devotees of classic automobile design. Once again the models shown against the picturesque backdrop of Villa d'Este indisputably represented some of the most beautiful vehicles ever built.

53 classic cars ranging from 1919 to 1971, along with 13 contemporary concept cars and prototypes, were subjected to the critical gaze of the jury and the public. As was the case last year, the participating models included a world premiere: Carrozzeria Zagato presented the Maserati GS Zagato. Outside the competition, the BMW Group revealed to the public for the first time its Concept Coupé Mille Miglia 2006. Following its appearance at Lake Como, this homage to the winning car of 1940 – the BMW 328 Mille Miglia Touring Coupé – will be on display in the redesigned BMW Museum when it opens in spring 2008.

This year's Trofeo BMW Group, the main prize awarded by the jury, went to the 1930 Mercedes-Benz SSK from the Ralph Lauren Collection. The SSK was produced in England by British coachbuilder Willi White based on designs by Count Felice Trossi. It took on the nickname "Black Prince" for the man who commissioned it and its bodywork colour. The Coppa d'Oro Villa d'Este, awarded by invited guests, went to the Bugatti 57C Cabriolet Voll & Ruhrbeck from the year 1939. This year another BMW took the prize for the longest journey to the event: Per Viberg left Norway in his BMW 335 Cabriolet Autenrieth in a blizzard and reached Como in bright sunshine. The Trofeo Rolls-Royce for the most elegant coachwork on a Rolls-Royce was awarded to the Rolls-Royce Phantom II Continental 2 door Hooper of 1932 belonging to Stefan Schörghuber.

For six years now, a further prestigious prize has been presented at Lake Como: the Concorso d'Eleganza Villa d'Este Design Award for the best concept cars and prototypes no older than two years. In 2007 it went to the Ferrari P4/5 Pininfarina. The American film producer and stockmarket guru James M. Glickenhaus had commissioned Carrozzeria Pininfarina in Turin with the conversion of his Ferrari Enzo. The shape of the P4/5 bodywork is reminiscent of the legendary Daytona winner of 1967, the Ferrari 330 P4.

The charismatic appeal of the classic gems assembled here was reflected in the crowds who came to the Public Day held on Sun-

day in the gardens of Villa Erba. In these grounds on the shores of Lake Como, enthusiasts were not only able to admire the classic models and concept cars on display, but also had a chance to view the special exhibitions "90 years of the BMW brand" and "Automobile Design by Giovanni Michelotti". Visitors voted the Alfa Romeo 6C 1750 Flying Star of 1931 their favourite and it was duly awarded the Trofeo BMW Italia prize.

The Concorso d'Eleganza at Lake Como is one of the leading automotive design events not only for the historic classics that gather here, but also because of the "BMW Group Design Talk Villa Erba 07". Featuring a high-calibre line-up of participants, the podium discussion focused on the artistic work process from the initial sketch to the finished car. As well as Giovanni Michelotti, Sergio Scaglietti was also honoured for his designs.

Next year's Concorso d'Eleganza Villa d'Este will take place from 25 to 27 April. Further information can be found at <http://www.concorsodeleganzavilladeste.com>. ■





+++ Review: Mille Miglia 2007 +++ Review: Mille Miglia 2007 +++ Review: Mille Miglia 2007 +++

## Mille Miglia 2007 – BMW pattern of wins continues

**Brescia.** The 25th staging of the Mille Miglia Storica, held 80 years after the very first 1,000-mile race, proved a nailbiting anniversary race. Right up to the end Giuliano Cané and his wife Lucia Galliani battled for a tenth victory in this reliability run in their 1940 BMW 328 "Berlin-Rom" Roadster with bodywork by Italian coachbuilders Touring; but ultimately they had to make do with fourth place. Luciano Viaro, partnered by Luca Bergamaschi, managed to repeat his victory of 2005 in an Alfa Romeo 6C 1500 S of 1928.

On reaching the start and finish point of Brescia, the disappointment could be read in Cané's face. The record-breaking Mille Miglia contestant would have loved to clinch his tenth victory in Italy in this anniversary year. However, problems in the first stage of the race saw him drop back initially. On the stretch from Rome to Modena Cané managed to work his way up from seventh to third position, but eventually he had to concede defeat to the Flamini Valsertiati/Andrea Guerini coupling in a 1933 Aston Martin Le Mans.

BMW had entered nine teams from BMW Mobile Tradition and ten private drivers. It finished third overall, a whisker behind Bugatti and Aston Martin. Porsche came seventh and Mercedes Benz 17th.

Marking their racing debuts on the historic 1,600-kilometre circuit from Brescia via Ferrara to Rome and back again were BMW board members Dr Klaus Draeger and Stefan Krause, as well as Karl Baumer, the new Director of BMW Mobile Tradition. All three claimed good placings in the front half of the field of 375 cars.

BMW managed to notch up a further success in the ladies' competition, in which the blue and white brand defended its triumph of last year. Italian serial winners Franca Boni and Monica Barziza took their 13th Coppa delle Dame in a BMW 328 of 1937 and finished 13th overall. The third-best BMW placing was also a ladies' double: Antje Dauphin and Ursula Simon were the best German team and celebrated an excellent 41st-placed finish.

The triumph of the classic Alfa Romeo was the continuation of an extraordinary sequence in which BMW has managed to win exclu-



Above | Dr Klaus Draeger, BMW Board Member Development and Purchasing, celebrated his Mille Miglia premiere in a BMW 327 Sports Convertible of 1937.

Below left | At the start of the 1,000-mile race: Stefan Krause, BMW Board Member Finance, in a blue BMW 328 Roadster of 1937.

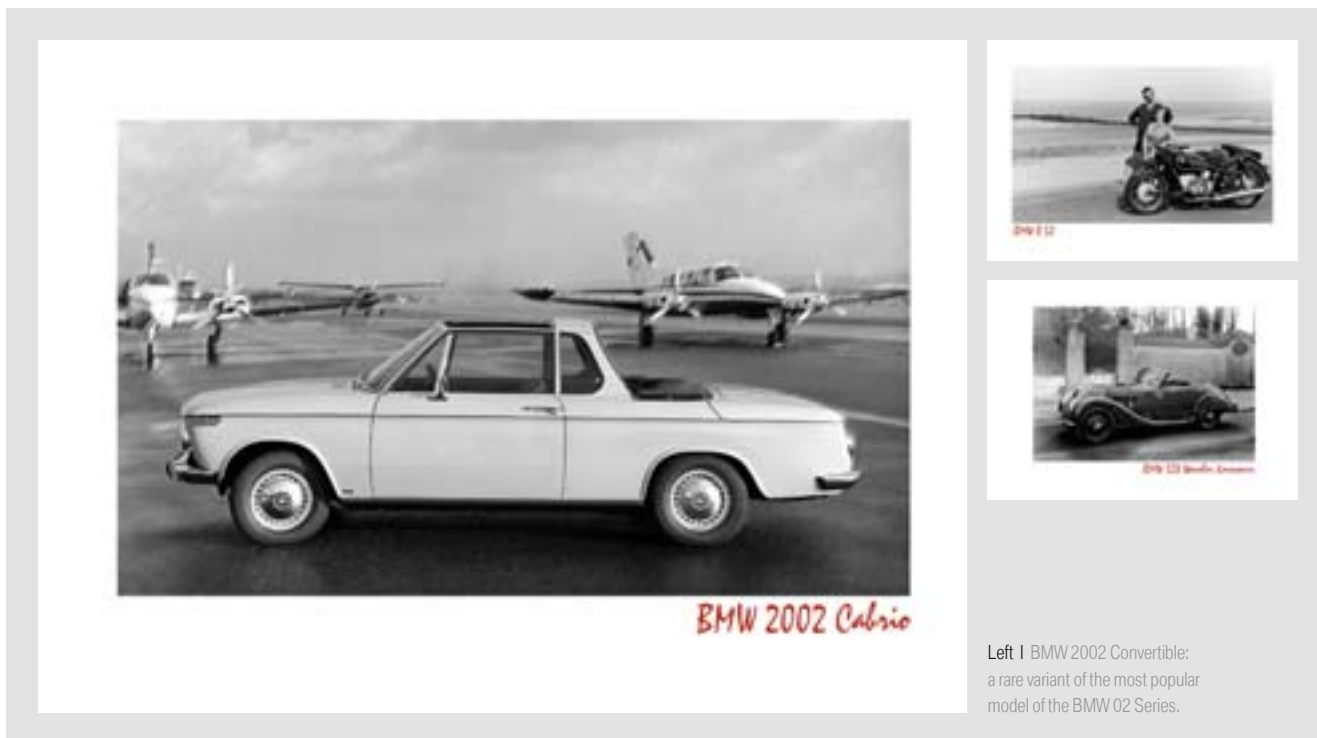
Below right | Franca Boni and Monica Barziza celebrate their 13th ladies' trophy, the Coppa delle Dame, with outgoing Mille Miglia organiser Dr Costantino Franchi (centre).

sively in the even-numbered years since 1996, i.e. every other Mille Miglia Storica. If you believe in this pattern, then there is only one brand up for victory next year. ■

BMW Group Mobile Tradition would like to thank Dr Costantino Franchi and his team, who are bowing out this year as the Mille Miglia organisers, for many years of outstanding commitment. As of next year, the company MAC Events will be the responsible organisers.



+++ Mobile Tradition art prints +++ Mobile Tradition art prints +++ Mobile Tradition art prints +++



Left | BMW 2002 Convertible: a rare variant of the most popular model of the BMW 02 Series.

## First edition of BMW Mobile Tradition art prints

Six highlights from the diverse and fascinating world of BMW product history are experiencing a revival in the form of high-quality art prints. Whether as one-off prints or as a collectors' edition, the selection of BMW models is aimed at car and motorcycle enthusiasts alike and breathes new life into the BMW heritage.

The first model to be taken up into this edition was the BMW 328. With its Wendler body, it left a strong imprint on the 1930s and 40s and is one of the great roadster legends of German motoring history. The fastest and similarly influential sports saloon of its time was the BMW 2002, boasting an output of 100 hp and a top speed of 173 km/h. It joins the print edition in convertible guise. The third car in this first edition is the M1. With a production run of just 399, the mid-engined sports car of 1978 was a milestone in the history of roadgoing sports racers.

Next to these three four-wheeled portraits, three motorcycles furnish evidence of BMW's competence on two wheels. Representing the earliest BMW motorcycles of the 1920s is the BMW R 37, on which Rudolf Schleicher won gold in the British Six Day Trial,

propelling the motorcycle to international fame. The BMW R 5 "Six Days" also made its name in this competition and marks the first BMW motorcycle with rear-wheel suspension. Finally, the BMW R 50 – which set new standards for ride stability and robustness with its full swing arm suspension – comes in as product number six to complete this edition of art prints.

Beyond their technical achievements, all six products are distinguished above all by their unique design, an attribute that is a pivotal consideration in the selection for this edition of prints.

The six high-quality photos are printed on artists' canvas made of 100 percent cotton. Thanks to high-resolution digital pigment printing, they convey a highly authentic impression. The art print edition comes with a choice of frames comprising handmade stretchers, framed or unframed, as well as branded aluminium frames.

The art prints measure approx. 60 x 40 cm and are available individually or as a collectors' edition comprising all six prints. Further information and details on how to order can be found at [www.bmw-grouparchives.com](http://www.bmw-grouparchives.com). ■



+++ BMW Group Mobile Tradition at the AGM +++ “Best car history book” award +++



Above | Highlights from the BMW past: the BMW 326 Sports Convertible with Gläser body, 1938.



Above | BMW Group Mobile Tradition at the AGM: (from left) BMW 2002 TI Rally, BMW K1 and BMW Z8.

## BMW Group Mobile Tradition at the 2007 Annual General Meeting

At the 87th Annual General Meeting held at Munich's Olympic Stadium, Dr Norbert Reithofer announced the most successful year so far for the BMW Group in the company's 90-year history. Turnover, profits and vehicle sales had risen again, noted the BMW Chairman.

BMW Group Mobile Tradition, which presented a small selection of historic BMW models outside the stadium as part of the event, also had reason to smile as their little exhibition met with keen interest from shareholders and BMW employees alike. Niklas Drechsler and Kai Jacobsen, the two experts from the BMW Group Archive, had their work cut out answering the many questions that came their

way. On display were three cars and one motorcycle from a range of eras: the dark blue BMW 326 Sports Convertible with bodywork by Gläser dated back to 1938, while the BMW 2002 TI Rally is the latest model to join the BMW Group Mobile Tradition fold. It was actively involved in racing in the early 1970s and triumphed in the Poland Rally, among other events. The BMW K1 of 1990 rates as one of BMW's most innovative motorcycles and also one of the most distinctive thanks to its blue and yellow paintwork. The last, and newest, model on show was a BMW Z8. The exclusive nature of this luxury sports car meant that within a few years of production phase-out it was well on the road to becoming a classic. ■



Above | Award ceremony in Leipzig: Jörg-Dieter Hübner (left), Head of Marketing and Communication BMW Group Mobile Tradition, with the BMW company history, and Jürgen Lewandowski, Chairman of Motor Presse Club.

## Award for BMW company chronicle

For the second time in succession, BMW Group Mobile Tradition received Motor Presse Club's award for the “Best car book on history”. Following last year's winning publication “The legendary BMW 507”, this year saw the award go to the book “BMW since 1916”. Another first prize went to Immo Sievers' account of the life and work of Jørgen Skafte Rasmussen, the founder of DKW.

Jörg-Dieter Hübner, Head of Marketing and Communication BMW Group Mobile Tradition, accepted the award, which is traditionally presented as part of the Leipziger Automobil International fair. The judges said of the more than 600-page tome compiled by BMW staff members Manfred Grunert and Dr Florian Triebel: “A true labour of love – the intensity and effort which BMW devotes to its history is commendable.”

The BMW Group also took the main prizes in two other categories: “MINI – The Book” (BMW AG, Hoffmann und Campe Verlag) was voted “Best car book on a brand” and “MINI Concept for the Future” (BMW AG, Hoffmann und Campe Verlag) was the “Best car book on design”.

The publication “BMW since 1916” is available from BMW dealers or directly from Heel-Verlag, Königswinter, tel. 01805-708709. ■

## 75 years ago | Around the world with BMW aero engines

From its inception BMW has been actively involved in long-distance and record-breaking flights. It was no surprise, then, when in 1932 Wolfgang von Gronau found backing in Munich for a bold undertaking: he planned to be the first person to circumnavigate the world in a flying boat. For this venture he put his trust in the tried and tested technology of the Dornier "Wal" flying boat and in the reliability and power of BMW VI aircraft engines. After elaborate preparations, he took off from the North Sea island of Sylt on 22 July 1932. Whether crossing the Atlantic or overflying the Rocky Mountains, nothing was too difficult for the pilot, aircraft or engines. The only technical hitch occurred off the Indonesian coast, but it was resolved in a local port within a few days. Finally, on 10 November 1932, Gronau touched down again at his starting point on Sylt. In under four months, and largely fending for himself, he had managed to fly around the earth, clocking up a distance of 44,800 km in the process. ■



Above | Wolfgang von Gronau's Dornier "Wal" flying boat, 1932.

Below | At the 1954 TT, Hillebrand/Grunwald came second to claim their first podium in a world championship race.

## 50 years ago | BMW wins 1957 sidecar championship



In 1957 Friedrich ("Fritz") Hillebrand and Manfred Grunwald won the world sidecar championship. For BMW this was the fourth drivers' title and the third constructors' title in succession. The pairing had their debut race outing together in 1953, and the following year the factory handed them one of the legendary RS sidecar combinations. The duo claimed their first GP wins in 1956 and concluded the season as world championship runners-up. Hillebrand/Grunwald kicked off the 1957 season with three triumphs – at Hock-

enheim, on the Isle of Man and in Assen. After coming third in the Belgian Grand Prix, they had the world championship title in the bag before the final race in Monza.

But the season was to end in tragedy. While training for the Bilbao Grand Prix in Spain, which did not count towards the world championship, they were involved in a serious accident. Manfred Grunwald sustained serious injuries but survived, while Fritz Hillebrand was pronounced dead at the scene of the accident. ■

## 40 years ago | BMW plant Dingolfing

The production launch of the “New Class” in 1962 ushered in a surprise boom for BMW AG, and the plant in Munich-Milbertshofen soon reached the limits of its manufacturing capacity. In 1966, BMW had the opportunity to buy out vehicle manufacturers Glas of Dingolfing as a way of expanding its production capacity.

Following protracted discussions, the BMW AG supervisory board and board of management decided to take over Hans Glas GmbH along with its workforce. The contract was registered on 25 November 1966 and the sale price amounted to ten million marks. The factory was incorporated into BMW AG and extended by a further large production hall. Initially BMW continued to produce the Glas vehicles, but phased them out in 1969 due to quality issues and difficulty in bringing them to market. BMW cars have been produced at Dingolfing since 1973. Today the plant turns out 5 Series, 6 Series and 7 Series models, as well as the M5 and M6. With some 22,000 staff, it is the largest production site within the BMW Group. ■



### Team

André Glas, H. und Karl Domsperg, H. bilden die alte und neue Geschäftsführung bei GLAS. Von BMW neu hinzugekommen ist als deren Geschäftsführer H.W. Boensch, W. Spezialist für Hochleistungstrieb- und -fahrwerke. Sein Hobby: perfekte Qualität. Käufer von GLAS Automobilen können diesen Männern vertrauen. GLAS Automobile kommen jetzt auch von BMW.



Right | The “new old” management at Dingolfing.

Below | Already a much sought-after recent classic: the second-generation BMW 3 Series.

## 30 years ago | Second-generation BMW 3 Series

The second generation of the BMW 3 Series marked a major diversification of the model portfolio. For the first time the 3 Series came with the choice of a two-door and a four-door saloon. Coachbuilders Baur offered convertible variants known as “Topcabriolets” before BMW launched its own full convertible model in 1985. The 3 Series Touring of 1987 was the first estate car to emerge from the BMW fold. Both the Touring and the Saloon were available in the top-of-the-range six-cylinder versions and with all-wheel drive. Apart from combustion en-

gines, there was also a choice of diesel engines with or without turbocharger. The BMW 325e, meanwhile, brought a special engine concept into play in the 3 Series range: one which focused on high torque at low revs. For fans of greater driving dynamics, BMW introduced a sporting icon into its second generation of the 3 Series: the first BMW M3. This race version was to become the most successful touring car on the track, and Roberto Ravaglia rode an M3 to victory in 1987 in the first ever World Touring Car Championship. ■





Wenn ein Jahr nach einem BMW benannt  
muss es ein besonderes w

2002 ist für uns mehr als eine Zahl. Der legendäre Oldtimer vereint alles  
ausmacht: souveräne Leistung, dynamisches Auftreten und mutige Ents  
Erfolg lehrte uns, auch in ungewissen Zeiten in die Zukunft zu investieren. E  
bis heute vorangebracht hat und mit dem sich auch morgen noch Geschicht

nt wird,  
werden.

in sich, was BMW  
scheidungen. Sein  
in Antrieb, der uns  
nte schreiben lässt.

BMW

[www.bmw.de](http://www.bmw.de)  
0180 2000 220  
(8 CL-Anruf)



Freude am Fahren







# The BMW brand. A story of success.

What do the following have in common: the BMW IV aero engine, the R 68 motorcycle and the 503 Coupé? At first glance not much, other than the fact they were all made by BMW. But each of these products stands for specific values that typify the BMW brand: authentic design, exclusive styling, innovative solutions, sporty handling both on- and off-road. With its campaign “The BMW brand. A story of success.” BMW Mobile Tradition is documenting the brand’s fascinating 90-year tradition.

Max Bauer

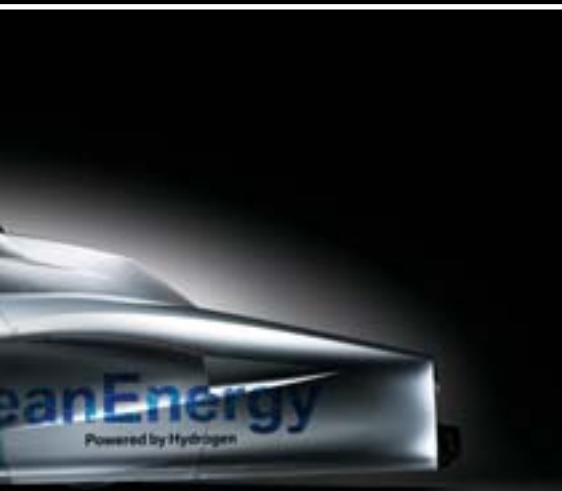


Founded on 21 July 1917, “Bayerische Motoren Werke GmbH” was the name given to the company that succeeded “Rapp Motorenwerke”. That same year saw the production launch of the BMW IIIa aero engine, the first product of the fledgling company. In 2007, the name BMW has become synonymous with premium-class vehicles – cars and motorcycles that are in demand worldwide. This success story is thanks not least of all to a strong and authentic brand whose development and history are closely allied with those of the company. Over some nine decades, the brand with the blue and white logo has developed into one of the 20 most valuable brands in the world. Today it is known for its distinctive style, precision, exclusivity, dynamism, responsibility, creativity, innovation and aesthetics. These attributes have gradually evolved since the founding of the brand in 1917 and are proven time and again through its products, strategies and decisions.

**Today one associates BMW** – perhaps more so than any other brand – with the terms sportiness and performance. Having squared up to the sporting competition from its very first product, the brand was accustomed to displaying its own dynamism and that of its products, whether in motorsport or series production, in the harsh but fair race against the clock and technology, against nature and competitors. Such dynamism has also played its part in corporate culture and in the brand’s commitment to moving forward. But it also stands for a certain youthfulness and mental agility.

On 17 June 1919, BMW test pilot Franz Zeno Diemer flew a DFWF 37/III to an altitude of 9,760 metres, higher than anyone before him. His record-setting aircraft was powered by a BMW IV aero engine. This was a convincing overall solution that featured an innovation developed by BMW designer Max Friz: his “high-altitude carburettor” enabled the engine to generate power even in thinner air. This record-breaking flight demonstrated not only the performance quality of those early products, but also the desire of BMW to measure itself against the best.

It was only to be expected, therefore, that BMW should choose another set of sporting challenges for its second product series – motorcycles. The company launched its first motorcycle, the BMW R 32, in autumn 1923. After winning a first championship in 1924, many other titles were to follow. It was not long before BMW motorcycles became a byword for high-performance sports machines. In 1937 BMW designer Rudolf Schleicher rode an R 37 production bike to a gold medal in the International Six Day Trial in England. That same year Ernst Henne established a new world record speed of 279.5 km/h on a BMW racing machine. By now the fledgling brand had become an international name. BMW triumphed all across Europe and by the late 1930s had become the most successful brand in sporting competition both on- and off-road. What’s more, such successes proved a highly valuable marketing tool. With creative publicity in the form of advertisements, commercials, posters and special events, BMW was also able to promote the sporty performance of its products well beyond the race track.





The fact that BMW only entered races in classes which allowed production models was proof of the close relationship that existed between motor racing and series production. Moreover, many of the innovations tested under motor racing conditions eventually found their way into series production. In the case of the BMW R 5 of 1936, for example, virtually the entire chassis was borrowed from the new vertical shaft supercharged works racing machine. Such transfer of technology lent the company's sporting image credibility and long-term strength.

**In the late 1920s** BMW also started up car production and celebrated early successes on the race track with the BMW 3/15. Then from 1936 onwards the company threw itself heart and soul into the production sports car segment with the BMW 328. Built on a lightweight tubular chassis and powered by a six-cylinder engine featuring innovative valve timing gear, the BMW Roadster dominated the 2-litre class from its debut race. After winning the Mille Miglia in 1940, the BMW 328 was considered by the international competition to be almost invincible. This boost to confidence from motor racing successes on the road fed into the company's development of aero engines. In 1943 a reconnaissance aircraft powered by a BMW 003 jet engine reached an altitude of 13,000 metres.

After the Second World War, BMW further highlighted its sporting prowess with the BMW R 68 of 1951. The powerful 600 cc boxer model was the first German-built production motorcycle to break the 100 mph (160 km/h) barrier. And sporting success continued for BMW on three wheels. From 1954 onwards the company won 20 successive world championship titles with its 200 km/h RS sidecar outfits.

Where cars were concerned, the competitive focus after the war was on hill climbs initially, although it was not long before the company returned to the sporting triumphs of the pre-war years. With the introduction of the "New Class" in 1962, BMW motor cars were some of the sportiest production models on German roads. In the early 1970s the BMW 3.0 CSL allowed BMW to continue the successes of the BMW 328. The brand's dominance was most evident in touring car racing, where the lightweight designs took all the European touring car titles from 1973 to 1979.

In 1977 Roberto Ravaglia won the first World Championship title. And BMW also took its next two WTCC championships in 2005 and 2006. With the introduction of the M3 in the mid-1980s, BMW pursued its development of series production and motorsport in parallel. The M3 achieved success from the moment of its introduction, winning a string of national and international race events to become the most successful touring car of all time.

The ultimate sports machine on German roads was the BMW M1 launched in 1978. The first M model from BMW Motorsport GmbH attracted a great deal of attention on account of its mid-placed engine, lightweight space frame and plastic panelling. The legendary six-cylinder engine in the racing version delivered up to 470 hp. The 3 Series also came to symbolise sporty production models, introduced in the mid-1970s as the successor to the 02 Series and still enjoying popularity today in its fifth generation.

The brand was again able to celebrate sporting successes in the early 1980s. First, on its return to motorcycle racing BMW surprisingly won four out of five Paris-Dakar rallies with the BMW R 80 G/S. 1983 then saw a highlight in BMW's sporting career when it

claimed the Formula One title. The credit for this achievement must go to the advanced, innovative, turbocharged 800 hp unit with digital engine electronics developed by “engine guru” Paul Rosche and his team.

**The BMW brand** is known not just for sporty performance, however. Since its founding the company has faced up to challenges arising from responsibilities towards society, the environment, customers and business partners. BMW has earned its position as technological leader as a result of its innovative, creative, bold and committed solutions. It also means that for over 90 years no principle or insight has been set in stone. Research and development are elements of an ongoing process in the quest to deliver improvement, progress, safety and added value. As a result of bold decision-making, BMW was able to conquer new markets – with the Isetta in the 1950s, for example. Other products used combined new technologies with tried and tested ones to produce a distinctive and pioneering whole. A prime example of this was the R 32, a motorcycle renowned for more than the quality of its build. For although BMW may not have been the first to mount a boxer engine transversely into the double frame or to use a shaft drive, it was the combination of the two which proved unique and which continues to influence motorcycle design even today. The example also illustrates one of the credos at BMW: “The whole is greater than the sum of its parts.”

The “high-altitude carburettor” developed by Max Friz and mounted in the BMW IIIa aero engine of 1917 was a highly innovative product. Other innovations in aircraft engine design were to follow, including engines with direct fuel injection and then, in the 1940s, the turbocharged radial engines. The BMW engineers greatly simplified control of aircraft in

the 1940s by fitting a kind of “mechanical onboard computer”. The “master control unit” of the BMW 801 reduced the many levers used by the pilot to just a single control. BMW presented a similarly intelligent solution in 2001 with its iDrive, a control module for all convenience functions.

As the driving force in motorcycle design, BMW always took into account value-added for the customer during development, whether in terms of riding pleasure, safety or comfort. Some of the most outstanding innovations included advanced developments in chassis engineering, from the hydraulically damped telescopic fork of 1935 and the straight-travel rear-wheel suspension of 1938, to the full swing arm suspension of 1956 and the Duolever introduced in 2004. World premieres were celebrated in 1976 with the first standard-fit full fairing for the BMW R 100 RS and in 1988 with the first anti-lock brake system to feature in motorcycle design.

As with the “New Class” in car design or with today’s Sports Activity Vehicles, BMW also created new market segments in motorcycle design, for example with the R 80 G/S touring enduro of 1980 and the unique C1 concept, whose roof provided the two-wheeler with the same sort of protection as a small car. BMW was also the first motorcycle manufacturer to concern itself with the development of complete equipment for the rider, such as integral pannier systems or the first safety and integral helmets, which were to become the model for an entire generation of helmets. Not least thanks to its innovations, BMW for the first time sold more than 100,000 motorcycles in 2006, bringing total global sales to date to around two million.

Talk of quality and innovations in the context of Bayerische Motoren Werke leads one first and foremost to engine development. BMW began developing engines for ▶

Facing page | The pioneering technologies featured in the BMW Turbo study of 1972 highlight the brand’s innovative power.

Below | The BMW R 32 of 1932 was the first motorcycle built by BMW. Its success was based not only on the quality of its design, but also on a unique combination of features, the influence of which can still be appreciated today – a shaft drive and a boxer engine mounted across the frame.



use in aircraft in parallel with engines for motorcycles. From the first twin-cylinder boxer of 1920 to the four-valve twin-cylinder in-line engine of 2006, all BMW engines share the same outstanding qualities of smoothness, sporty performance and reliability. These qualities apply equally to the broad range of car engines. In particular, the six-cylinder engines premiered in 1933 in the BMW 303 have become one of the brand's most enduring features. Other engines to stimulate public excitement included the first V8 light-alloy engine fitted as standard to the BMW 502 of 1954, the V12 unit in the BMW 750i of 1987 – the first German 12-cylinder engine built since the 1930s – and the first BMW diesel engine in the 524td of 1983.

Examples of the engines' integration of innovative drive technologies can be found in the double VANOS variable valve timing system or its more advanced version, Valvetronic, introduced in 2001. These result in increased output and torque while using less fuel and improving emissions quality. And in so doing they not only fulfil BMW's aims to innovate successfully, they also show how decades-old ideas can be revisited and adapted to fit in with new discoveries: variable valve timing was patented in the BMW 802 aero engine back in the 1940s.

Innovative engine development is part of BMW's "EfficientDynamics" strategy, which also includes the aerodynamics and lightweight construction departments. Its goal is to give the customer a product that offers maximum driving pleasure coupled with maximum economy.

In lightweight construction BMW is gradually adding to the number of weight-reducing parts, in the engines as well as in the body. In order to safeguard quality, BMW built the most advanced light-alloy foundry of its day in the second decade of the last century. The BMW 328 Mille Miglia found racing success as a result of its use of aluminium and space frame, as did the later BMW 3.0 CSL, with its carbon-fibre and light-alloy technology. Lightweight construction methods were applied more consistently in the years that followed, for example in the Z1 with its plastic floor pan and bodyshell, in the Z8 with its aluminium space frame, and in the M models. BMW unveiled other pioneering innovations in car design in the 1970s. The BMW Turbo study of 1972, for example, was a response to the safety debate of the day. This innovative study integrated several safety and comfort features that were subsequently



Above | The engine in the BMW 750i of 1987 was the first German-built 12-cylinder unit since the 1930s.

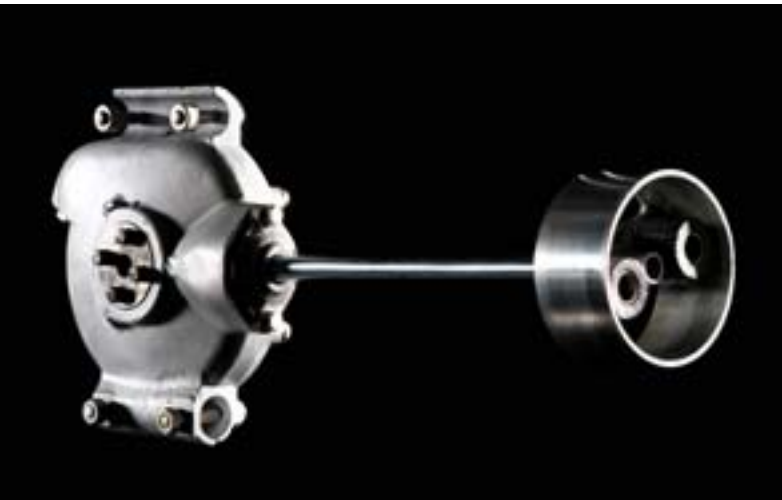
fed into series production, such as the driver-oriented cockpit, ABS and the precursor of impact absorbers. Now in a more advanced stage of development, these BMW systems and innovations continue to lend vehicles stability and safety today. Safety features such as ABS, Dynamic Stability Control (DSC) and Dynamic Drive all play their part, as do the many driver support systems such as Active Cruise Control – the idea for which arose from the Turbo's radar distance warning unit – or Hill Descent Control.

In many areas BMW remains a leader in developing innovative solutions today. Night Vision, Head-up Display, xDrive and Active Steering are just some of the latest developments to come from the BMW design house. The ultimate aim of all this is to increase driving pleasure by improving the safety and comfort of the driver.

**Even the BMW R 32**, the company's first motorcycle, had a slightly higher price tag than competitor products. But it sat better on the road, the engine was much quieter, and riding it was therefore a more enjoyable experience. It is this claim to premium quality that characterised the BMW brand from the outset. The term "premium" was understood as an integrated whole: from devel-

Below | The BMW 3.0 CSL was the first of a series of high-horsepower coupés built from 1971 onwards. Their lightweight design made them ideal as the basis for racing sports cars.





Above left | The shaft drive is one of the characteristic features of BMW motorcycle design – pictured here is a model in use from 1926 to 1930.



Above right | Inside the BMW 335 Cabriolet of 1939 the eye is drawn to the illuminated speedometer, a highly exclusive feature for the day.

opment and production to marketing and service, the brand's uncompromising aim was to offer its customers only the best. And this approach also held true for the design of BMW products and the technology used, for the brand image and the professional conduct of its employees.

One feature of the premium character and sophistication of the brand can be found in the comprehensive exclusivity of vehicles such as the R 63 of 1928, the 6 Series or the BMW Individual models, and covers everything from the choice of high-quality materials to precision processing and limited production runs. Individuality is a highly prized commodity. Take the BMW 745i of 1980, for example. The two special equipment options, High Line and Executive, represent the last word in quality materials for the interior, with seats upholstered in the finest, lightweight buffalo hide and the dash and door panels finished in burr walnut. With much of its natural colour retained, the wood exudes a natural silky sheen.

Exclusivity was also the hallmark of the company's first luxury-class model, the BMW 335 of 1939. Available as both a Saloon and a Cabriolet, the design – in particular that of the open-topped version – combined aesthetic appeal, luxury and meticulous craftsmanship. Worthy of special note is the design of the interior, featuring an illuminated speedometer. A vehicle from the 1990s marked a further high point: with its blend of retro design and state-of-the-art technology, the BMW Z8 seemed tailored for exclusivity. The attention to detail is striking, though entirely lacking affectation. The car's exclusive tag also manifests itself in the Z8's limited production run: only 5,703 units were produced in the period from 1999 to 2003 – each car meticulously hand-built.

In terms of vehicle design, aesthetic appeal is the product of employees' creativity as well as reflecting the character of both brand and customers. From the very beginning, the company's products have stood for individuality and distinctiveness, elegance and aesthetic appeal – and this was true for cars, motorcycles and engines, and for exterior and interior design alike. The BMW approach to design could best be described as aesthetically sophisticated, classically timeless, a balance between traditional and state-of-the-art.

In 1938 BMW set up an in-house department responsible for vehicle design. The result was a number of dream cars that included the BMW 327 Coupé of 1938 and the BMW 503 and 507 designed by Albrecht Graf Goertz in the 1950s. In particular the BMW 507

was considered the last word in elegance, and for many it was quite simply "the world's most beautiful sports car".

BMW motorcycle design has long been determined by the state of technology. The boxer engine and technical innovations represent design elements in themselves and have always been perceived as such. The timeless look is highly prized, the almost ubiquitous black paintwork that adorned motorcycles until well into the 1960s still reflects tradition and style. In 1973, BMW successfully created a style icon in the shape of the R 90 S, the world's first two-wheeler to feature a handlebar-mounted fairing and eye-catching two-tone paintwork. The machine was to have a lasting impact on motorcycle design in general. Another particularly arresting two-wheeler was the first BMW cruiser – the R 1200 C – which combined classic design features with state-of-the-art technology. And it was on high-tech that BMW built its hopes for further design possibilities from the late 1970s on. BMW was one of the first manufacturers to use computer programs for the virtual realisation of models. The results were to be found in the elegant BMW 7 Series or the "best coupé in the world", the 8 Series. The company's aesthetic tradition continued throughout the 1990s, and it unveiled new and spectacular developments such as the Z models. In order to pool its creative resources, the various development and design departments were concentrated in the BMW Research and Innovation Centre. Moreover, in 1998 BMW bought the highly reputed DesignworksUSA studio, which was responsible among other things for the design of the Z4 and the X5.

Often it is the detail that turns a vehicle from the ordinary in design terms into something special – stand-out features that distinguish BMW from other brands and at the same time create premium character and value-added. BMW vehicles are constantly changing and adapting with the times and with technological progress, yet they remain faithful to their heritage. Several styling cues embody in a distinctive way the presence, aesthetic appeal and emotionality of the BMW brand. Perhaps the oldest and most obvious symbol is the blue and white BMW logo, which has appeared on every engine, motorcycle and car from the outset. A second detail, and one that has adorned every BMW car since the introduction of the BMW 303, is the double-kidney grille. A third distinctive BMW styling cue introduced in the 1960s is the so-called "Hofmeister kink" – the company's hallmark C-pillar, which instead of making a conventionally



rounded transition to the body incorporates a sharp kink. The most recent characteristic styling feature to be introduced are the dual headlamps on BMW cars. The numerous national and international prizes awarded to BMW specifically for its design achievements have raised the brand's design expertise and the aesthetic appeal of its products to an objective level.

Responsibility is a cornerstone of BMW's marketing strategy. The Group consciously and proactively takes responsibility for employees, shareholders and business partners, for the environment, the local community and its culture. The aim of its broad-ranging involvement is to earn the trust of the global community for business as a whole and the company in particular. In return BMW gains stability and can contribute to shaping its immediate environment.

Employees who loyally supported the brand throughout difficult economic times in the 1950s, for example, were able to enjoy an early share in the company's profitability and become part of the specific corporate culture. BMW has always been well aware that the expertise of its employees is the company's single greatest asset.

Dialogue with society also involves supporting cultural institutions and events – a commitment that embraces all artistic and creative fields. The first BMW cultural programme was initiated at the Dingolfing plant in 1978: a classical concert given by the Munich Philharmonic. Since then, the brand's cultural activities have flourished throughout the world. Examples are now to be found in Munich's "Opera for All", the Conservatory of Music Beijing, the Cultural Festival de México, a jazz club in South Africa and the AkademieGalerie on the Munich underground system: BMW has had a hand in all these, as initiator, organiser and financial backer. In addition to these cultural activities BMW has also sponsored sport and itself taken part in competitive sporting events. On the one hand, athletic performance and sportsmanship have typified the brand from the beginning. On the other, BMW plays an active role in sports that complement the brand image: Formula One, golf, tennis, sailing. With exclusive sporting events such as these, BMW is able to offer customers the sort of products they appreciate – even when the car is in the garage. Involvement of this kind earns the brand repute, social prestige and respect.

Motor racing gave birth to the idea of the BMW Art Car Collection, the most direct and unequivocal link between the BMW brand, its products and the art scene. In 1975 Hervé Poulain asked Alexander Calder to redesign a BMW 3.0 CSL Coupé. "His love of colour matched our love of driving," is how BMW put it. So far 15 Art Cars have been designed by different outstanding international artists and exhibited worldwide.

BMW has always attached special importance to the field of architecture. In 1972 the company once again found itself in the spotlight for pioneering architecture – although this time it had nothing to do with vehicle design. The construction of the Group headquarters – the BMW Tower – and the BMW Museum won BMW international recognition. Today this tradition of innovative architectural design continues at BMW in the form of the BMW Welt complex and the new plant in Leipzig.

Left | The BMW IV aero engine established a new altitude world record in 1919.

It was not just the unusual circular design of the BMW Museum that caused such a sensation at its official opening in 1973. As well as providing a showcase for its exhibits, the Museum has always been used by BMW as a public platform. The Museum was seen as a way of building bridges between past, present and future, as well as between technology and culture. When the newly redesigned and enlarged BMW Museum reopens in spring 2008, BMW will be continuing its long tradition of striking architectural concepts.

The company has always been conscious of its responsibilities towards society and regards involvement in local educational initiatives or the provision of rapid, non-bureaucratic aid in the event of emergencies like the Indian Ocean tsunami disaster of 2004 as an unwritten obligation. As part of the "Corporate Citizenship" strategy BMW is as ready to support global ideological campaigns as it is to provide funding for concrete projects at grassroots level. One might mention in this context the ongoing struggle to promote international understanding, as well as the company's membership of the United Nations Global Compact scheme. As well as educational programmes, BMW has been providing intensive driver training schemes since the 1970s, thereby demonstrating that the company continues to support drivers even after they have purchased their BMW.

In recent years public opinion has increasingly focused on the highly sensitive issues of conscientious resource management and the environmental compatibility of products and their production. Responsibility and sustainability have been a part of BMW thinking, strategy and front-line action for decades. Various innovations made an impact early on, including the ongoing reduction of fuel consumption as part of the EfficientDynamics strategy or the conversion of the Munich plant's energy supply from coal to natural gas in the 1960s. BMW made environmental protection a Group func-

tion in 1973. In 2001 BMW was the first European vehicle manufacturer to set out in its "Sustainable Value Report" how the objective of sustainable conduct can be achieved in practice.

In addition to innovative recycling and clean production methods, BMW has been researching alternative drive possibilities since the 1970s. At the core of BMW's "Clean Energy" strategy is the thought of powering vehicles using resources that are environmentally compatible. Along with electric and hybrid cars, the brand remains confident that hydrogen will successfully be developed as a fuel of the future. Having presented Europe's first car powered by liquid hydrogen in 1979 – the 520 – the company achieved another first in 2006 with its Hydrogen7, the first hydrogen-powered car to have undergone the entire production development process. In order to prove the reliability of its development programme, in 2001 BMW dispatched a fleet of 15 BMW 750hL models on the CleanEnergy WorldTour. Generating awareness and giving a higher profile to specific topics through events, initiatives and creative publicity campaigns is an essential part of BMW's public commitment.

There are special events, too, for fans of classic BMW vehicles and for the 200,000 members of the auto industry's largest club network. The Concorso d'Eleganza Villa d'Este, Techno Classica and the Mille Miglia provide BMW with further opportunities to showcase the brand and product history – a role that became the official responsibility of BMW Group Mobile Tradition in 1994. Since then, Mobile Tradition has sought to project the fascination of the corporate, brand and product history in lively colours. And so it is with its latest campaign: "The BMW brand. A story of success." was launched this year by BMW Group Mobile Tradition. A film and book to accompany the campaign will be available in the autumn via the BMW dealer network and Heel-Verlag, Königswinter. ■

Below | The M3 Group A from the German Touring Car Championship (DTM) of 1987 highlights the sporty character of the BMW brand.







# BMW Motorrad – passion on two wheels since 1923

A lot has happened in the world of BMW motorcycles since the first model was shown in 1923. By 2006, sales of motorised two-wheelers bearing the blue and white badge had for the first time climbed to more than 100,000 in just one year. Eight eventful decades of motorcycle history at BMW have seen many pioneering engineering achievements and sporting triumphs – not to mention the occasional financial crisis. The 90th anniversary of the BMW brand is a good point at which to stand back and take a closer look at the history of these quintessential BMW products.

Fred Jakobs

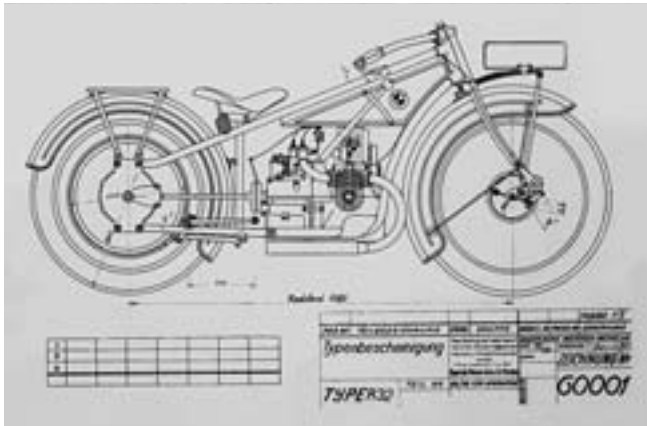
Although it was not until September 1923 that BMW presented its first motorcycle, the R 32, the company had already entered the motorcycle business some three years earlier. In 1920 it had started building the M 2 B 15, a 500 cc horizontally opposed (or boxer) engine, which it supplied to various motorcycle manufacturers in Germany. The 6.5 hp twin-cylinder engine was used in motorcycles of the Bison, Helios, SMW and Victoria brands. Since Victoria was the biggest customer, it hit BMW hard when the Nuremberg manufacturer decided to go over to building its own engines.

In response, in the winter of 1922/23, BMW chief engineer Max Friz set about developing an own-brand BMW motorcycle. Friz completed a basic design in just a few weeks, which he then subjected to extensive testing. With Friz in the saddle, the new bike came through the Bavarian Mountain Rally with flying colours and without picking up a single penalty point. By the end of testing BMW was able to proceed to the launch secure in the knowledge that its first motorcycle was a fully matured product.

The R 32 first met the press and public at the Berlin Motor Show. Both were equally enthusiastic – not because the R 32 boasted anything unusual in the way of performance or innovative engineering. Rather, it was the “sum of the whole” that got people talking. While competitors’ motorcycles were still very reminiscent of bicycles in appearance, the R 32 from BMW already had a distinctive individual identity. It was a purpose-built, integrated design with a horizontal, transversely mounted 500 cc boxer engine that was based on the M 2 B 15, and a twin-tube frame. The transmission and engine formed a single unit, with the engine driving a shaft to the rear wheel. The clearly defined lines were topped off by black paintwork, with distinctive white pinstriping on the fuel tank and mudguards. Proof of identity was provided not by obtrusive lettering but by the blue and white enamel badges on the tank. Although there is no hard evidence of a direct influence, the R 32 was to all intents and purposes the motorcycling equivalent of the rationalist, functionalist Bauhaus ethic of the 1920s (“form follows function”).

Another attraction of the R 32 was its outstanding quality. The engineers and factory workers had designed and built the R 32 to the same high standards as an aircraft engine, the ultimate engineering benchmark of the times. This quality came at a cost, however: following the currency reform, the asking price for the R 32 was 2,200 rentenmarks (a temporary currency introduced in 1923), and if customers wanted electric lighting, a horn, a speedometer and a pillion seat, this set them back a further 400 marks. In short, the BMW was the most expensive motorcycle on the German market. With its very first motorcycle, the company had positioned itself full square in the premium segment. Over 3,000 R 32 sales were recorded, despite the fact that customers had plenty of larger-engined, more powerful and much cheaper models to choose from, both German and imported.

**More models.** Following the instant success of the R 32, BMW quickly added more models to its motorcycle range. At the 1924 Berlin Motor Show, it presented a 500 cc sports model, the R 37, and also a 250 cc single-cylinder entry-level model, the R 39. The R 37 provided the basis for the first works racing bikes, powering BMW to its first race wins and champion- ▶



Top | The R 39, BMW's first single-cylinder model.

Above | Drawing of the BMW R 32.

ship titles. The infant brand made a name for itself at international level, too, by taking a gold medal in the 1926 International Six Day Trial, held in the UK. This sparked some respectful reporting in the British press, which wrote that: "Beyond doubt the most interesting machine of the whole competition was the German BMW ... Its engineering is streets ahead of any of the British machines." The R 37 was the first motorcycle in the world to sport light-alloy cylinder heads, an innovation that could be directly attributed to BMW's aero engine operations, which included an in-house aluminium foundry.

The entry-level R 39 soon claimed a sporting triumph too, winning the German Championship in 1925. However, the fact that this model was built to the same quality standards as the large boxer-engined models immediately put paid to any idea of winning new customers through attractive pricing. With only 855 sales, the R 39 failed to live up to expectations and after only two years it was taken out of production. That said, the R 39 remains an excellent illustration of BMW's philosophy of never compromising on quality, a philosophy the company has stood by for more than 85 years. Rather than jumping on the bandwagon of the growing mass market, with its next products BMW actually decided to head further upmarket.

**1928 saw the launch of the first 750 cc BMW motorcycles.**

The top-of-the-line model was now the 24 hp BMW R 63, which had

a top speed of over 120 km/h – a fantastic speed if one remembers that the roads of the times were generally unsurfaced. Speeds like this quickly exposed the limitations of the soldered tubular frame construction, particularly in sidecar operation. BMW responded by designing an all-new riveted, pressed-steel chassis, which made its debut in 1929 in the R 11 touring model and the R 16 sports model. The new design gave motorcycles a much heavier look – in fact, their robustness and sturdiness was visible a mile off. These latest models from BMW inherited the 750 cc engines used in the predecessor R 62 and R 63 models, but were around ten kilograms heavier. In the early 1930s other German manufacturers brought out pressed-steel models too, some of which even boasted twin-cylinder boxer engines. The foreign press soon dubbed this design principle "the German school of motorcycle engineering".

BMW now brought out further pressed-steel models. It also reacted to changes in the licensing regulations – introduced in 1928 as a way of bolstering the German motorcycle industry – under which motorcycles with an engine size below 200 cc were exempted from insurance and licensing requirements. For this market BMW now offered the R 2, a lightweight single-cylinder model whose price tag of 975 reichsmarks made it considerably cheaper than the two boxer bikes, which in 1931 were priced at 1,630 and 1,880 reichsmarks. Since this smallest model, too, was designed to BMW's already proverbial quality standards, customers could be confident of getting a genuine BMW for their money. In its first year in production, more than 4,000 R 2 models were built – two thirds of total BMW motorcycle production for 1931.

**A boom in motorcycle business.** A step down from the big boxer-engined models, BMW had not offered a 500 cc model since 1930. To fill this gap in the range, BMW now brought out the R 4, like the R 2 a single-cylinder model but with a displacement of 400 cc. This 12 horsepower unit provided adequate power for the relatively lightweight 137 kg motorcycle, which also had very good off-road capabilities. By the time production was discontinued in 1936/37, more than 15,000 units of each of these two models had come off the line in Munich. Increasingly, this output was driven by exports. Although BMW had already started exporting motorcycles to Japan in 1924 and to the US in 1927, the turning point really only came in the early 1930s. The breakthrough was undoubtedly helped not just by the quality of the product but also by the promotional effect of sporting successes, in particular the 76 world records set by Ernst Henne between 1929 and 1937. "The fastest motorcycle in the world" was a slogan that other manufacturers couldn't argue with.

**In 1935, BMW pulled off a new surprise** when it introduced the world's first hydraulically damped telescopic fork on a production motorcycle. The fork was fitted in the large R 12 and R 17 boxer models, which now superseded the leaf-sprung R 11 and R 16. The telescopic fork – still the most widely used front suspension system for motorcycles to this day – had already been extensively tested by BMW in 1934 in both on- and off-road motorsport. The telescopic fork brought significant comfort and handling gains.

BMW launched its last pressed-steel model – the R 35 – in 1937. This model was used mainly by the police and military, for training purposes and as a despatch motorcycle. Sales had topped the 15,000 mark by 1940, making the R 35 as successful as its predecessors, the R 2 and R 4.



Above | Sporting success was the most effective form of advertising for the young brand.

**1936 saw the debut of the R 5**, the first of a completely new generation of motorcycles. In appearance this 500 cc sports model resembled the works racing bike that had caused such a stir in 1935. A bulky pressed-steel frame had now given way to an electrically welded oval tubular construction. With this lightweight frame and the revolutionary telescopic fork, the excellent handling performance came as no surprise. The engine was similarly an all-new design, with a valve train featuring two timing chain-driven camshafts. In a further change, riders now used their left foot to operate the four-speed transmission. The tool compartment was integrated in the tank, while two-tone wheels pointed to equal attention to detail on the styling front. The R 5 was a genuinely modern-design motorcycle, whose sporty lines continued to influence the appearance of BMW motorcycles right up until the end of the 1960s. In 1937, two more tubular-frame models appeared: a 600 cc tourer, the R 6, and the R 20, which superseded the R 2 entry-level model.

**Racing experience transferred into production.** In 1938, BMW further improved the comfort and handling of its boxer models with the introduction of straight-travel rear suspension. Like the telescopic fork, the rear suspension too was a racing-derived design. The steady technology transfer meant that motorsport successes provided excellent advertising for the company's production models as well. And since by the 1930s the BMW brand was a byword for sporting success, the benefits flowed thick and fast. In the International Six Day Trial, to all intents and purposes a European off-road championship, a BMW team took first place in the country rankings three times in a row, while on the race circuits the BMW vertical-shaft supercharged works racer held sway. This machine gave the company a string of Grand Prix wins and, in 1938, the European Championship title, which was won by Georg Meier. On top of all this, Ernst Henne's speed records provided further triumphs. Henne's last speed record of 279.5 km/h stood from 1937 until 1951. BMW also brought out limited-production sporty versions of its R 5 and R 51 models, which allowed privateers as well to compete in and win

aces and championship titles. And with sporting success came commercial success. In 1935, annual production for the first time topped 10,000 motorcycles, rising to more than 20,000 units in 1939. BMW was strongly positioned, fielding a well-rounded model range that included four boxer-engined and two single-cylinder models.

**BMW motorcycles during the war years.** For BMW motorcycles, the Second World War brought abrupt changes. By 1941 all civilian motorcycle production had been halted, and from now on motorcycles were only produced for the military and other public clients. This remaining model range comprised the R 35, the R 12 and a motorcycle and sidecar combination designed for military operations, the BMW R 75. The latter model weighed in at 420 kg and sported a number of technical features that were specially developed for wartime service, such as a transmission with different drive ratios for on- and off-road operation, a reverse gear and a powered sidecar wheel. In 1942, BMW motorcycle production was transferred from Munich to the former car factory in Eisenach to make way for an expansion of aero engine production. In Eisenach only the R 75 now remained in production, before it too was discontinued in 1944.

**After the war,** BMW was initially subject to the ban on car and motorcycle production imposed by the American occupation forces. What's more, the company had no way of accessing its engineering records, machinery and remaining parts stocks. All of these were marooned in Eisenach, now in the Soviet-occupied zone, while any surviving drawings in Munich had been confiscated. When permission was granted for motorcycle production, it was decided to start with a model from the pre-war product range – partly because it was thought that there would also be a big market for spares. And since it was also thought that the biggest demand, particularly on the part of the public authorities, would be for 250 cc models, the choice fell on a BMW R 23, the last single-cylinder model developed by BMW before the war. An R 23 was now stripped down, all its parts dimensions measured and new blue-

Below left | An acrobat in London demonstrates the BMW R 5's impeccable handling.

Below centre | The BMW R 51 taking part in the International Six Day Trial in 1939.

Below right | Off-road testing of the BMW R 75.





Above | The full swing arm models, like the BMW R 50, held sway throughout the 1950s and 60s.

prints produced. Unveiled in March 1948, this first post-war model was codenamed R 24. The response was enormous. The first bikes were supplied to customers in December 1948, and by 1949, 9,400 of them had already taken to the roads.

In 1950, the BMW R 24 was superseded by the R 25, which now featured rear-wheel suspension. The same year also saw the return of BMW boxer models, with the launch of the R 51/2. This model, too, was based on a pre-war motorcycle, the R 51. Even in times of economic hardship, therefore, BMW remained unwavering in its policy of not producing for the mass market. 1951 saw the launch of the first two models – the R 51/3 and the R 67 – to be powered by a completely new boxer engine, while the R 68, presented at the 1951 International Bicycle and Motorcycle Fair (IFMA), finally put BMW motorcycles firmly back in the top international league. This was the first German production motorcycle to reach a top speed of 160 km/h, or the 100 mph threshold. At the time, the R 68 was seen as the must-have machine for sports-minded riders. The sales price of just under 4,000 marks enhanced its exclusiveness – only 1,452 of these bikes were built and sold.

The company was doing well commercially, too. By 1954, annual production had risen to almost 30,000 motorcycles. The largest contribution came from single-cylinder models – for example the R 25/3 alone contributed 47,700 units in three years. But by 1955, the year BMW presented a new motorcycle generation with full swing arm suspension, the German motorcycle market was already going into a slowdown. The “economic miracle” meant that growing numbers of Germans were switching to the car, while the image and prestige of the motorcycle started to decline. BMW could not escape the trend, and in 1957, motorcycle production slumped to 5,429 units – a downturn of 82 percent in just three years. What kept BMW’s motorcycle operations afloat was its public sector business – in the 1960s, police forces in more than 100 countries bought their motorcycles from BMW. Many competitors, however, were not so fortunate. All this meant that the models presented in 1955 – the single-cylinder R 26 and the R 50, R 60 and R 69 boxer models – underwent only minor modifications right the way through until 1969. Even the launch of the R 69 S in 1960, the fastest German motorcycle to date with a top speed of 175 km/h, could do little more than paper over the problems.

**It was not until the mid-1960s** that the first glimmers of light began to appear at the end of the tunnel, particularly in the US. Registrations started to pick up again, especially in the larger displacement classes. More and more, the motorcycle came to be seen not just as a means of transport but as a sport and leisure accessory – and as a symbol of adventure, rebellion and freedom. The catalyst was the 1969 film “Easy Rider”, featuring the song “Born to be Wild”. This song soon became an anthem for a whole new generation of bikers. The motorcycle now also became a symbol of non-conformism. It offered a sporty alternative to the car and a way of standing out from the car-driving masses. Of course, growing prosperity meant that many people decided to have it both ways. No longer was it an either/or choice between motorcycle and car – rather than competing, the two forms of transport began to assume complementary roles.

**So the mood had become much more upbeat** by the time BMW presented its all-new “/5” series, which put the emphasis on sporty performance. It was clear from the brochures that these new models were designed to appeal to a new target group of dynamic male customers. The camera captured them posing with their BMW and with their villa in the background. Business success and motorcycling were no longer mutually exclusive as the motorised two-wheeler became increasingly upwardly mobile. The new customers demanded lots of power – which helps to explain why the /5 series was the first in BMW’s history where the flagship model, the R 75/5, was also the top-seller. The launch of the /5 series coincided not only with the transfer of all motorcycle assembly to Berlin, but also with an upturn in production. By 1978, output had drawn level with the previous high, recorded in 1954.

The Japanese brands, which gained their first foothold in the European market in the early 1960s, now dominated the market. But BMW’s determination to remain a premium manufacturer – that is to say to offer high-quality, innovative products – proved to be the right choice. At a time when many manufacturers were focusing solely on performance, BMW offered the perfect overall package. Comparison tests, for example on the legendary Nürburgring Nordschleife, regularly saw the BMW models come out ahead of their rivals.

**BMW also kept up a steady stream of innovations.** One such milestone was the R 90 S of 1973, whose handlebar-mounted fairing has remained an icon of motorcycle design to this day. This was BMW’s first ever 900 cc bike and also the fastest to date, with a top speed of 200 km/h. Its front brake was a twin disc brake, a new feature for a volume-production motorcycle. The next landmark was the R 100 RS, which appeared in 1976. The world’s first motorcycle with a wind tunnel-developed full fairing, the R 100 RS not only boasted excellent aerodynamics, it also offered ideal protection against the elements. The BMW R 100 RT, meanwhile, which came out in 1978, offered the ultimate in long-distance touring comfort. A further newcomer in 1978 was a new entry-level series comprising the R 45 and R 65 models.

**In 1980, with the R 80 G/S,** BMW pioneered a new category of motorcycle: the large touring enduro. The BMW R 80 G/S – at the time the largest-displacement enduro on the market – was a perfectly judged combination of comfortable street bike and agile off-road machine, qualities that were previously regarded as incompatible in a single machine. The G/S also featured the

Below | The BMW R 1100 RS, the first model in the four-valve boxer series.





Above left | Futuristic vision: the BMW K1.

BMW Monolever single rear swing arm, a technical highlight which significantly improved handling and ease of maintenance. Large-engined enduros have remained an important segment for BMW to this day, one in which BMW remains the benchmark.

**Although in the 1970s** BMW brought out a steady stream of innovative motorcycles, the boxer engines had been taken just about as far as the technology of the time would allow. Emissions and noise standards were in the pipeline which would have made it impossible to increase power significantly without sacrificing BMW's hallmark reliability. A number of alternative concepts were now given careful consideration, before eventually a drive system was selected which was new to motorcycle design. It comprised a fore-and-aft-mounted horizontal four-cylinder engine combined with the customary shaft drive to the rear wheel. Electronic injection and digital engine management were the technical highlights of this "Compact Drive" system. A displacement of 1,000 cc delivered maximum power of 90 hp at 8,000 rpm.

**Also new was the suspension**, with the engine and transmission housings designed as structural, load-bearing components. As with the boxer engines before them, a complete model family was offered, from the K 100 unfaired base model and the sporty K 100 RS, to the comfortable K 100 RT touring model and its more luxurious sibling, the K 100 LT. These motorcycles were assembled at the Berlin plant on the world's most modern motorcycle production line, which went into service in 1983. The new models were a runaway success and were soon showered with awards. In 1985 a three-cylinder version, the 750 cc K 75, joined the K Series. The K 75 similarly appeared in various versions over the years, from the unfaired base model to the comfortable K 75 RT.

**Things weren't standing still on the boxer engine front either.** For example, 1987 saw the debut of the second-generation BMW enduro models. Their most striking innovation was a revised rear swing arm, the Paralever, which was designed to mini-



Above right | The BMW R 80 G/S.

mise pitching. The Paralever principle is still used today to maximise handling performance.

With the launch of the K1 in 1988, BMW presented its first production motorcycle to feature four-valve-per-cylinder design. The bold styling of the K 1 underlined the strong accent on innovation. And shortly afterwards, BMW pulled off more surprises with two trailblazing innovations in safety and environmental protection. First of all, in 1988, BMW became the first manufacturer in the world to offer a motorcycle ABS system; even in the first year, 60 percent of customers were already opting for this active safety system. Secondly, in 1991 BMW also offered a controlled catalytic converter. This too was a world first for a motorcycle manufacturer.

**Boxer engines are alive and well.** Though customers accepted the K Series as a genuine BMW, and though it featured numerous technical innovations, the twin-cylinder boxer models remained an integral part of the BMW range. After all, BMW is more closely identified with this type of engine than any other manufacturer. However, the existing engine was not getting any younger – its basic principle had been adopted from the /5 Series, launched in 1969. At the 1992 IFMA in Cologne, BMW presented a new-generation boxer engine with digital management, electronic injection and four-valve cylinder heads. The fact that at this prestigious motorcycle fair BMW chose to present the 90 hp 1,100 cc engine on its own, without – as yet – a bike to go with it, showed the importance it attached to boxer engines. In 1993, in time for the 70th anniversary of the BMW motorcycle, BMW then presented the R 1100 RS, the first model in the long and eagerly awaited new generation. The frame, which had already been presented the previous year, was supported by newly developed suspension, and as on the K models, the engine and transmission now served as structural, load-bearing components. The rear wheel was fitted with the proven Paralever, while the front wheel featured another landmark innovation from BMW, the Telelever. The Telelever combined a telescopic fork with a longitudinal control arm to provide vastly improved longitudinal and lateral stiffness. ▶

**Thanks to ABS and the catalytic converter,** BMW's boxer-engined models now also offered leading-edge safety and environmentally friendly technology. They also set standards once again on styling. Over the course of time, the RS was joined by a large enduro, a comfortable tourer, an unfaired roadster and, in 1997, BMW's first ever cruiser, the R 1200 C. In 1998, the boxer family was rounded out by the R 1100 S sports model, which marked a return both in model name and in substance to the time-honoured sports boxer tradition. On top of all this, some models were now also offered in 850 cc entry-level versions. With this completely renewed model range, BMW was able to demonstrate just how much potential the BMW boxer engine still had even after more than 70 years. The flawless engineering and enduring appeal of this generation of boxer models, currently comprising the R 1200 S, R 1200 GS, R 1200 RT, R 1200 R and R 1200 ST, remains undiminished to this day.

**As well as the launch of the new boxer models,** 1993 also saw BMW present its first single-cylinder model since 1966. The BMW F 650 was jointly developed by BMW, Austrian engine manufacturer Bombardier-Rotax and Italian motorcycle manufacturer Aprilia. Assembly took place at the Aprilia plant in Noale, Italy. But outsourced production was not the only new feature. At the same time the F 650 was also the first bike in BMW's 70-year history to feature chain drive to the rear, rather than shaft drive. But none of these changes deterred customers from accepting the F 650 as a "genuine" BMW. Since the entry-level model delivered so much riding enjoyment both on and off surfaced roads, the series code name

"F" quickly came to be interpreted as "F" for Funduro. In 1995, the F 650 did much to help BMW's annual production climb past the 50,000 mark for the first time ever. In 1996 a further model, the F 650 ST, was added to the single-cylinder range.

**The launch of the new-generation boxer models** and the new single-cylinder models also heralded the end of the two-valve boxer engine. As a final salute various special-edition models were released, and in December 1996 a large gathering of journalists looked on as the last model – an R 80 GS Basic – came off the line in Berlin. The three-cylinder models were phased out the same year, while the four-cylinder model range was extended. In the early 1990s, the displacement of the RS and the LT luxury tourer had already been increased to 1,100 cc, and in 1996 the RS followed up with a new 1,200 cc engine, the output of which was limited in some markets, like Germany and France, to 100 hp, while in other countries an "unrestricted" version was offered. At the time, ten years ago, this version's maximum output of 130 hp, top speed of 245 km/h and maximum torque of 117 Nm were a new experience for BMW riders. Then, in 1998, the luxury tourer also underwent extensive changes. The resulting K 1200 LT reinterpreted the entire concept of a "luxury tourer". Eye-stopping styling was combined with ample power and torque and, for relaxed cruising, lashings of comfort.

**2000 got off to a spectacular start for BMW,** with a 1-2-3-4 finish in the Dakar Rally. This was the perfect prelude to the launch of the new single-cylinder enduros. The BMW F 650 GS and F 650

Below | The HP2 Enduro competing in a sporting event.





Right | The BMW F 800 ST.

Below right | The most powerful "naked bike" in the world: the BMW K 1200 R.

GS Dakar, which now replaced the previous single-cylinder models, were equipped with state-of-the-art engineering such as fuel injection and ABS. BMW was now the world's only motorcycle manufacturer to offer controlled catalytic converters and ABS for all models in its range, thus positioning it once again at the leading edge on environmental protection and safety. The new models were built at the Berlin plant, where production capacity had just been expanded yet again. In model year 2002 a roadgoing version, the F 650 CS "Scarver", was added to the enduro family.

Earlier, 2000 saw the market debut of the BMW C1. This innovative concept model with integrated safety cell offered the same levels of passive safety as a modern small car. More than 33,000 units had been sold by the time production was discontinued in 2003. Despite the disappointing sales of the C1 while it was still in production, this model, which was designed primarily as an urban runabout, has now achieved cult status and has already become a coveted collectors' item.

**Business at BMW was now thriving as never before.** Annual motorcycle production had risen to over 80,000 units, an increase of more than 50 percent in the space of just six years. In the eighth decade of BMW motorcycles, outstanding quality, innovation and reliability remained the key success factors. But there was no getting round the fact that high-quality design and a host of technical innovations had steadily increased the weight of the bikes. In the following years, therefore, BMW implemented a systematic lightweight design approach, starting in 2004 with the BMW R 1200 GS. Precise design computations, intelligent lightweight construction and use of high-strength materials brought a 30 kg reduction in weight compared with the previous model. This, plus an increase in horsepower, gave the new model added pace and agility.

**A few years ago, BMW launched an ambitious new model offensive.** First up was the K 1200 S, a 167 hp sports model fitted with a new transverse-mounted four-in-line engine. The K 1200 S also trod new paths with its suspension, which featured the BMW Duolever fork. A K 1200 R, the world's most powerful unfaired motorcycle, and the K 1200 R Sport added a fast-revving short-stroke engine to the range.

The HP2 Enduro (HP=High Performance), unveiled in 2005, was the most extreme off-road motorcycle ever produced by BMW. Pared down in appearance, yet boasting many refinements, this uncompromising machine – the world's most powerful enduro – offers total ride enjoyment even on the most challenging trails. One year later, BMW brought out a companion model for the street, the HP2 Megamoto. The "HP" label now stands for a range of bikes which all feature carefully thought-out overall design, perfected engineering down to the smallest detail and superior handling performance.

In late 2005, BMW unveiled new parallel twin-cylinder models, the F 800 S and F 800 ST – two mid-size motorcycles which closed the gap between the single-cylinder range and the boxer models. The next year, 2006, BMW continued its model offensive with the new G Series. The G 650 Xcountry, G 650 Xchallenge and



G 650 Xmoto extended the product range and reached out to new target groups. With their high-quality product content, spare styling and exceptionally sporty handling, these single-cylinder models are attractive niche products that offer their mainly young and young-at-heart owners unspoilt riding enjoyment.

In 2006, BMW's annual motorcycle production for the first time exceeded 100,000 units, proof that BMW Motorrad remains as much of a high flier as ever, even after 80 years in the business. The main cornerstones of this success are outstanding products and strong brand values. Rather than being simply scripted by a marketing department, these values have evolved naturally over many decades. This way, customers know that when they buy one of the company's products they are getting not just a motorcycle but "a genuine BMW".

The history of BMW product designations

# From the IIIa to the X3

How did products from Bayerische Motoren Werke get their names? The history of the nomenclature for aero engines, motorcycles and cars is marked on the one hand by enduring lines, on the other by surprising twists and turns.

Dr Florian Triebel

Ancient history provided the inspiration behind the nomenclature for the first BMW aero engines. The German Imperial Flying Corps arranged the engines for its aircraft according to output classes using a system based on Roman numerals, and the majority of engine manufacturers adopted this military coding for their product designations. For example, Karl Rapp's 145 hp engine was badged "Rapp II" and his 175 hp unit "Rapp III". And when BMW received an order for an innovative high-altitude engine for the Prussian Flying Corps in the summer of 1917, the company's management followed the same process in christening the new 185 hp engine "BMW IIIa". The "a" after the Roman numerals indicated a deviation from the engine's basic template.

The BMW IIIa derivatives developed during the First World War also gained their designations in a similar way. The 120 hp training engine was named "BMW II", the larger-capacity further developments producing 250 hp and 370 hp "BMW IV" and "BMW V" respectively.

BMW restarted aero engine production after 1922 with tried and tested constructions bearing their original designations. The design engineers continued with the Roman numeral structure even though the new, higher-output powerplants could no longer be incorporated into the original system.

The company used this naming system for both its water-cooled and air-cooled aero engines up to 1932 – from the "BMW VI" to the "BMW XV". However, this military-inspired nomenclature sat rather awkwardly with the power units developed by the BMW engineers from 1919 for stationary applications, cars and motorcycles. Instead, these engines were given the name "Bayern-Motor" as a sales designation, usually followed by the output figure.

A new designation system for these units was agreed within the company based around their technical fundamentals, such as the number of cylinders, their model series and project number. This produced designations like "M4A1" and "M2B15", which looked decidedly secretive at first glance. Broken down, however, it was immediately clear to the initiated which product they referred to. The "M" stood for "Motor" (engine), the following figure for the number of cylinders, the letter for the model series and the final number for the project number in question. For example, the "M4A1" was an "A" series (large-capacity in-line) four-cylinder engine with the project number 1.



Left | Model badge for the BMW 1800, built from 1963 to 1968.



Right | The BMW 3200 S Cabriolet with V8 engine. This one-off car was built for Ahmed Ben Bella, Algeria's first president.





Left | With precisely one extra horsepower (13 hp in total), the 1955 BMW Isetta 300 was the more powerful version of the standard Isetta 250.



Left | Developing 105 hp the BMW 1600 ti of 1967 was the sporting variant of the 1600.

Right | The first BMW motorcycle engine, produced for Victoria in Nuremberg, c. 1920.



# Zu Ostern!



Ein interessantes

# BMW

Programm

Facing page | Cover of a dealer brochure for the BMW motorcycle range in 1937.

BMW acted to simplify the system in the mid-1920s. The references to the number of cylinders and model series were abandoned. Now the only entry in front of the project number was to denote an engine (“M” = Motor), transmission (“G” = Getriebe), a frame for motorcycles (“R” = Rahmen) or a chassis for cars (“F” = Fahrgestell).

And this was how the first ever BMW motorcycle got its name. The frame for the new bike was given project number “R 32” when it was entered into the project list. The engine was christened “M2B33”, later shortened to “M33”. The transmission used in the motorcycle bore the designation “G 34”. The internal project number for the frame construction saw the motorcycle unveiled with the official sales designation “BMW R 32”. Initially, all the brand’s motorcycles were issued with their name according to this system, a product of the design organisation.

The early car projects – not all of which made it into series production – were labelled with designations starting with an “F”. Only two of the BMW three-wheelers developed in Munich went into production in 1933, and these were offered for sale under their project designations “F 76” and “F 79”.

The mid-1920s saw an enforced change to this designation principle. Up to that point each motorcycle had its own frame construction. Now the designers started using the same frame for several models, although these could be distinguished by the engine variant fitted. This development meant that the sales designation for the models could no longer be based on the project numbers for the frames. The “R” was retained, but was now followed by a two-digit number which differed from the design designation.

**Motorcycles were to be given new sales designations.** A system giving the single-cylinder machines single-digit sales designations and the two-cylinder units two-digit designations was hastily introduced. Following the takeover of the Eisenach vehicle factory, BMW adopted existing designations for the car models produced there. The small car built under licence from Austin was named the “Dixi 3/15 PS” in line with accepted naming logic at the time. The figure in front of the slash was the key value for motor vehicle tax, while the second referred to the car’s actual developed horsepower. In the early days of production under licence, the Eisenach vehicle factory sold 100 original right-hand-drive Austin Seven cars under the Dixi trademark. In the interests of differentiation, the “DA 1” appendage was added to the designation of the first models built in Eisenach with left-hand drive – as was standard in Germany. This most likely represented an abbreviation of “Deutsche Ausführung” (German version), although “Dixi Austin” was another possible translation. BMW adopted this designation, using the “DA 2” to “DA 6” extensions internally to identify further developments of the car.

The first vehicles developed by BMW in Eisenach retained the three taxable horsepower rating, but engine output was boosted to

20 developed horsepower. BMW kept to the existing naming process, labelling its new small car the “BMW 3/20 PS”. This was another case where designation add-ons were used internally to mark out modified models from “AM 1” to “AM 4”. The “AM” abbreviation had previously been translated as “Ausführung München” (Munich version). However, since the car was designed and built in Eisenach, the accuracy of this seems rather doubtful. A far more convincing explanation had “AM” down as short for “Auto-Mobil”, in the same way as the designation “R” (standing for “Rad” [wheel]) was attached to motorcycles. Another interpretation saw “AM” referring to the “Ausführung Mercedes” (Mercedes version), as the bodies for the BMW 3/20 Saloon were produced at Daimler-Benz’ Sindelfingen plant, which also built the bodies for Mercedes cars. The BMW 3/20 chassis had to be adapted to the requirements of the Sindelfingen body shop and was given the initials as a means of differentiation. They were then retained for all further variants.

With the acquisition of the Eisenach vehicle factory in 1928 the decision was taken to separate the numbering systems for aero engine, motorcycle and car development.

**The National Socialist authorities** oversaw an intensification of rearmament in Germany from 1933. In order to simplify the expansion of the Luftwaffe, the Reich Air Ministry apportioned fixed numbering systems to its various engine manufacturers. BMW was given the range between 100 and 199. This meant that the aero engine branch’s development projects from 1933 bore new designations, and all aero engine projects came under this system up to 1945. The jet engines developed by BMW after 1939 were listed officially as project 109. The sub-project 109-003, known as the “BMW 003”, was completed shortly before the end of the war.

BMW took the new instructions as the signal to introduce a new internal naming system. As the numbers 100 to 199 had already been assigned to aero engines, motorcycles were given the range from 200 to 299 and cars the 300-to-399 band. The existing motorcycle models were integrated into the new system according to their conventional designation. For example, in development documents the “R 32” became the “232”. The sales designations traditionally used for motorcycles were retained, although modifications were made to the existing system. From the mid-1930s the nomenclature for the models reflected, as a rule, the engine displacement. For example, the 500 cc boxer unit was named the “BMW R 5” and its successor the “BMW R 51”.

As far as the cars were concerned, the new development numbers were not initially used in sales. Dealers offered their customers a “45 hp saloon” or “80 hp sports car”. BMW changed tack in 1936 and began to use development designations for the first time in sales of cars as well. In brochures and handbooks the company now badged its cars as “Baumuster 315” (“Mark 315”) or “Typ 328” (“Model 328”), for example.

Following the takeover of the Brandenburgische Motorenwerke engine factory in 1939, BMW was issued with a new numbering ▶



Left | Model badge for the first-generation BMW 520, 1977-81.



Right | The 1973 BMW 2002 turbo, the first turbocharged series-produced model; (far right) the model badge for the BMW K100 motorcycle.





Above | As a "real BMW", the "big brother" of the Isetta once again included the engine capacity in its sales designation, 1957.

system for aero engines by the Reich Air Ministry. In place of the "100" numbers previously assigned to BMW engines and the "300" numbers set aside for the units produced at the Brandenburgische Motorenwerke factory, the new aero engine projects were to carry "800" designations.

**BMW got back into its stride after the end of the Second World War** with further developments of its pre-war models. The first post-war motorcycle was an only slightly modified version of the pre-war single-cylinder BMW R 23. As well as breathing new life into 1930s engineering, BMW also rekindled the familiar old designation system; the first post-war model – presented in 1948 – bore the name "BMW R 24".

The system was not easily extendable for cars. The development engineers had almost exhausted the number band originally intended with their final pre-war projects. The 400 range was assigned to the products coming out of substitute production in the immediate post-war period, and so the design department moved to set aside the 500 band for its new BMW cars.

As it picked itself back up again after the war, BMW also fell back on the familiar when it came to car production. For example, the development number of the first post-war model, the "BMW 501", once again doubled up as its sales designation. However, it soon became clear that this system was not sustainable. The cars were produced and put on sale with various different engine variants from 1954, with model designations initially given extensions referring to engine displacement. The original designation based on the development number was soon phased out, and the cars were named solely according to their displacement. Indeed, the

designation of the "BMW 502 3.2 litre" was shortened to "BMW 3.2". From 1968 all large-class cars were named exclusively according to their displacement.

The sole exception to this rule was the Isetta, produced under licence from 1954, which saw BMW adopt the designation of the Italian original built by the ISO company. BMW then launched a competition among employees to find a name for the Isetta's "big brother". This attracted a wealth of imaginative and fascinating suggestions, but the most popular title proved to be "BMW 600". The car was powered by a modified 600 cc motorcycle engine.

And so, at the behest of its employees, BMW returned to engine displacement for its latest product designations. The company remained faithful to this neat and tidy system during the 1960s. From the BMW 700 to the BMW 2800, the cars' names were derived directly from the engine under the bonnet.

The marketing experts created an additional designation for the new mid-range cars sent into production by BMW in 1962. This model series was christened the "New Class", as BMW had created what it saw as a unique and unrivalled new category of car in the shape of this sporty mid-range saloon. This car was subsequently joined by a smaller two-door model series in 1966. As a means of differentiation, the model designations were changed to reflect the two-door body. The final "0" of the displacement designation gave way to a "2". The models in this small-car series were therefore labelled the "BMW 1602", "BMW 1802" and "BMW 2002" – and known collectively as the "02 Series".

**When it came to motorcycles powered by boxer engines,** BMW retained the familiar designation "R" – followed by a number



Left | In a break from the BMW norm, the K 1 (1988-93) lettering is prominently displayed on the side of the bodywork.



Right | The BMW 3200 CS luxury coupé with the latest V8 engine, 1962-65.



denoting the engine displacement – over the course of the decades that followed. Offshoots of the basic model were identified by added-on abbreviations, “G/S” standing for Gelände/Straße (off-road/on-road), “GS” for Geländesport (off-road sport) and “RT” for Reisetourer (tourer).

The decision of BMW to produce motorcycles with in-line engines saw the bikes in these model series receive a totally separate designation. The development designation “K” was adopted as a series badge. As with the boxer models, the “K” was followed by a number derived from the displacement of the in-line engine. BMW followed the same pattern with the single-cylinder machine which went on sale in 1993; this model series was given the designation “F”, referring to the “Funduro” concept. More recently, the new generation of lightweight single-cylinder machines presented in 2006 took on the letter “G”.

BMW explored a totally different direction in its attempt to launch a new type of mobility concept. Its “enclosed motorcycle” was christened “BMW C1”, the “C” standing for “City” – the main area of use for this two-wheeler. Meanwhile, the new off-road bike unveiled in 2005 saw BMW break for the first time with the naming systems used for boxer-engined motorcycles since 1923. It was dubbed the HP (High Performance) 2 (cylinders) Enduro.

**The car model series also fell into line.** As detailed planning for the introduction of the mid-range model series got underway in 1971, the Board of Management was locked in an intense debate on the subject of model designations. At first glance, the existing system did not make clear the model series the car belonged to. And so, in a departure from existing practice, the new model nomenclature was to emphasise the model series of each car.

Initial thoughts centred – in time-honoured BMW tradition – on using the development project number as the sales designation. A shift in policy in the mid-1960s had resulted in the car projects being issued with “E numbers”. This system should have seen the successor to the BMW 2000 carry the sales designation “E 12”, but on this occasion the idea was rejected.

One alternative was to give all models a three-digit designation, the first digit denoting the model series, the following digits the engine displacement. This system had the advantage of putting the model series of the car in pole position, while also making the identity of the engine clear. The Board gave the proposal the green light and decided to issue the mid-range model series with the number “5” and the smaller model series with the number “3”. The planned large model series was to be known as the “7”. In what has since proved to be a farsighted decision, the even numbers and the number “1” were left free to accommodate the arrival of new models further down the line.

This apportioning of numbers assured the new system a settled future – one which has now stretched for over 30 years. The first model to feature the new designation was the direct successor to the BMW 2000. The 2.0-litre mid-range model (E 12) was brought

to life in 1972 as the “BMW 520”, while its 2.5-litre six-cylinder sibling was christened “BMW 525” in line with the new system.

BMW added an extra letter to the nomenclature to denote model series with special characteristics. The high-performance models developed by Motorsport GmbH on the basis of the standard production cars were identified by an “M” badge – which has since become acknowledged as “the world’s most powerful letter”. In 1989 the company unveiled its first roadster for almost 50 years. The sports car was developed by the BMW Technik GmbH engineers under the code “Z1”, an internal designation which also became its public identity. “Z” has since established itself as the lead letter for BMW roadsters and sports coupés. The launch of a Sports Activity Vehicle led BMW to introduce “X” as a model series designation. This was a letter with a strong tradition; a small “x” added to the end of a 3 Series or 5 Series badge after 1985 indicated the presence of all-wheel drive.

Below | The company used this billboard to advertise the first BMW 520 – the first model with the new series designation, 1973.



Left | M – “the most powerful letter in the world”, here next to the logo on the side of the BMW Z4 M Roadster.



Left | The BMW 760 Li from 2002. The “Li” stands for the long version of the 7 Series.



Right | Launched in 1999, the BMW X5 was the brand’s first Sports Activity Vehicle.

NUMMER 7 • 2. JAHRGANG • JUNI 1927 PREIS 1.50 K.

# NÜRBURG-RING

bei ADENAU (Eifel)



**Offizielles Programm**  
für die

**Eröffnungs-Feier des Nürburg-Ring**  
und die

**Eifelrennen 1927 des A.D.A.C.**  
am 18. u. 19. Juni 1927



1927 saw the opening of the Nürburgring

## The “Green Hell” turns 80

The bond between the Nürburgring and BMW is as old as the circuit itself. The Munich-based carmaker has enjoyed great success in motorsport events in the Eifel mountains ever since the inaugural race at the track, and no other manufacturer can match its record of victories in the 24-hour race. The BMW Group also uses the Nürburgring intensively as a test track for road cars and motorcycles. New models have to meet the required mark here to get the green light for production.

Niklas Drechsler and Fred Jakobs

The Nürburgring – and above all its “Nordschleife” course – exudes an almost mythical allure. The “Ring” remains the world’s longest permanent race circuit today, despite countless alterations, and much straightening and shortening over the years. In the eyes of many drivers this is still the world’s toughest track. Winding its way harmoniously through the delightful Eifel countryside, its captivating location belies an unforgiving nature and a tendency to punish the smallest loss of concentration with merciless zeal. The history of the ‘Ring is decorated with the names of many world-famous racing drivers who themselves attained legendary status here in both glorious victory and painful failure. One such legend, the Scottish driver Jackie Stewart, gave the Nürburgring-Nordschleife what has become an enduring nickname, one which sums up its unique combination of beauty and brutality: the Green Hell.

**The story begins in the Eifel mountains in 1922.** On 15 July that year, the public gravel roads here were the venue for the first Eifel Race organised by the ADAC motoring organisation. The 33-kilometre circuit took the competitors through 86 corners and a vertical drop of 265 metres. Still very much a fledgling motorcycle brand – its first bike was presented in 1923 – BMW didn’t

have to wait long to taste success. Franz Bieber (in 1924) and Toni Bauhofer (1925) not only won the 500 cc class but also claimed overall victory, each setting course records in the process. In 1926 Ernst Henne won the 500 cc class and finished behind only a 1,000 cc Harley Davidson in the overall classification.

In no time the Eifel Race had established itself as one of the most important events in Germany and gave an economic boost to a traditionally underdeveloped part of the country. This was certainly one of the factors behind the decision of Adenau district council on 18 May 1925 to build a mountain course, race track and test track. The circuit was to consist of a 22.810-kilometre “Nordschleife” (north loop), a 7.747-kilometre “Südschleife” (south loop) and a 2.238-kilometre “Zielschleife” (finish loop), adding up to a total length of 28.265 kilometres.

The track was built with four main aims in mind, and the state authorities provided the funds required to help it meet them. The aims were: 1. To provide work for up to 2,500 unemployed people from the administrative district of Koblenz every day; 2. To attract tourism to the region; 3. To serve as a test and practice facility for the car and motorcycle industry and motorsport associations; 4. To move motorsport events away from public roads. ▶

Below | Karl Gall on a supercharged BMW in the 1939 Eifel Race.



**On 27 September 1925** building work began on the track that was to be christened the "Nürburgring". A good 18 months later, on the weekend of 18/19 June 1927, the 'Ring was opened amid celebratory scenes. The highlight of the opening ceremony were the Eifel Races, with which the circuit was officially inaugurated. Toni Bauhofer celebrated overall victory in the track's first event on his BMW 500, building on the success of BMW in previous editions of the race.

This was followed two weeks later by the European Grand Prix – the first major international meeting at the Nürburgring. The race turned into a demonstration by the British marques and riders. The retirement of BMW works rider Ernst Henne from second position left the Britons to complete a clean sweep of the top four places. Graham Walker took the race win on a Sunbeam. However, victory in the 750 cc class went to Josef Stelzer on a BMW and, in the years that followed, BMW riders enjoyed a regular diet of success at the Nürburgring. Among those to earn a place in the winners' lists up to 1939 were Hans Soenius, Karl Gall and Wiggerl Kraus.

However, even in those early years the Nürburgring was far more than just a racing venue for BMW. The Munich-based manufacturer also used the ideal testing conditions of the Eifel circuit to put its road cars through their paces.

**It was not only on two wheels** that BMW was quick to prosper at the new track. The company's first win in a car event came in the 1930 Eifel Race, P. A. Schmidt driving his BMW 3/15 Wartburg to victory in the category for sports cars up to 750 cc. The win was all the more remarkable as BMW had only begun car production two years previously.

The Nürburgring soon became the venue for many a success story. The BMW 328 dominated the 2-litre class from 1937. As early as its first race outing – and still only a pre-production model – it was taking Ernst Henne to a stunning victory on the track. In the 1936 Eifel Race the world record-breaking BMW motorcycle rider romped to victory on four wheels in the 2-litre class with his BMW 328. Henne set the fastest time of any sports car in the field and, with an average speed of 101.5 km/h, outstripped even the supercharged machines.

After the Second World War it was once again the motorcycles that brought glory to BMW. In the first post-war running of the Eifel Race in 1947 Georg Meier took the solo spoils in his pre-war supercharged BMW, while Josef Müller and Josef Wenshofer claimed victory in the sidecar class up to 1,000 cc – also on a pre-war machine. Meier celebrated another four wins in the race up to 1953 before hanging up his goggles and gloves. Into his boots stepped riders like Walter Zeller and Ernst Hiller, and these new stars had further bolstered BMW's collection of wins as the 1950s drew to a close. The BMW sidecar teams were even more successful than the solo riders at the 'Ring. BMW pairings such as Klankermeier/Wolz, Noll/Cron, Hillebrand/Grunwald, Camthias/Cecco, Deubel/Hörner, Schauzu/Kalauch and Enders/Engelhard captured the imagination of spectators into the 1970s on their way to a string of race wins.

As the era of the legendary RS teams slowly entered its twilight phase, BMW was already celebrating its first victories and championships in touring car racing. The first post-war 24-hour race on the 'Ring took place in 1970, Hans-Joachim Stuck storming to a magnificent victory in his BMW 2002 T1. Stuck had set the fastest lap in practice, but in the race itself he received orders from boss Hans Peter Koepchen to take it easy

Below left | Racing driver Paul Greifzu in his BMW 328 sports car, here with start number 32, in the 1937 International Eifel Race at the Nürburgring.

Below centre | BMW leads BMW: Schneider/Grunwald head Noll/Cron in the 1955 German GP.

Facing page bottom | Chris Amon and Hans-Joachim Stuck drove the works BMW 3.0 CSL to victory in the touring car grand prix in 1973.





Above | A familiar sight up to the mid-1970s: the BMW 02 Series cars dictate the pace.

in the early stages. When it then began to rain on the Sunday, there was no stopping Stuck. In tandem with his team-mate Schickentanz he went on to secure his first win in a 24-hour race with a comfortable cushion over the chasing field.

That proved to be the start of an unparalleled history of success enjoyed by BMW in the Nürburgring 24-hour race. By 2006

BMW had racked up 109 class wins and 18 victories in the overall classification. Some of these triumphs also proved to be of serious historical significance. In 1998 Hans-Joachim Stuck, Marc Duez, Christian Menzel and Andreas Bovensiepen became the first driver team in the history of motorsport to win a 24-hour race with a diesel-powered car (a BMW 320d).

The one-two victories with the BMW M3 GTR in 2004 and 2005 were also little short of sensational. Never before had a manufacturer clocked up one-two finishes in a 24-hour race in successive years. The victorious team in 2004 comprised Dirk Müller, Jörg Müller, Hans-Joachim Stuck and replacement driver Pedro Lamy, while the second-placed car was piloted by Duncan Huisman, Pedro Lamy and Boris Said. The two driver teams fought off the competition from Porsche, Opel and Audi in impressive style.

2005 saw Pedro Lamy, Duncan Huisman, Andy Priaulx and Boris Said guide the car with start number 2 to victory, having opened up an advantage of five laps over their sister car and seven laps over the third-placed Dodge Viper. The second Team BMW Motorsport BMW M3 GTR with start number 1 was shared by the previous year's winners Dirk Müller, Jörg Müller and Hans-Joachim Stuck.

The Nürburgring also provided a fertile hunting ground for BMW in formula racing. Jacques Laffite recorded the first Formula 2 win for BMW in 1975 in a Martini Schnitzer BMW MK16. Two years later Jochen Mass took the maiden victory in F2 for a BMW works team at the wheel of a March BMW 772. In 2003 BMW won a Formula One race at the 'Ring for the first time – on the grand prix course completed in 1984. BMW celebrated a widely lauded one-two that day, Ralf Schumacher taking the chequered flag in his WilliamsF1 BMW FW25 ahead of Juan Pablo Montoya in the European Grand Prix.





Above | The BMW one-two in 2004 was the first part of a historic back-to-back success. Pictured is the winning car with start number 42.

Below | Nick Heidfeld in the latest Formula One car on the Nordschleife, 2007.

Then, earlier this year, Formula One returned to the Nordschleife circuit for the first time in 31 years. Nick Heidfeld had the privilege of powering his BMW Sauber F1.07 out onto the famous old course as part of the “BMW Motorsport erleben auf dem Nürburgring” (Experience BMW Motorsport at the Nürburgring) event. There has not been an F1 race on the Nordschleife since 1976, when Niki Lauda was caught in the fireball that so nearly claimed his life. A lack of run-off zones and insufficient crash areas, a surface that is extremely bumpy in places and the sheer length of the circuit has meant it is no longer suitable for Formula One. Heidfeld’s venture out into history did not therefore take place under race conditions, the track having been closed off for the event. “We wanted to use the day to thank the fans for their support,” explained BMW Motorsport Director Mario Theissen. “The VLN endurance championship was taking place at the Nürburgring Nordschleife that weekend and around a third of the drivers were lining up in BMW cars. That’s one of the reasons why BMW Motorsport is one of the partners in the VLN.”

The fastest lap time ever officially recorded on the Nordschleife is still held by Stefan Bellof, who powered round the course in his Porsche 956 in a time of 6:25 min in 1983. However, that was the last year a sports car championship race visited the Nordschleife. The fastest lap in a DTM touring car was set by Johnny Cecotto, who needed just 8:46 min to negotiate the combination of the Nordschleife and the grand prix circuit in his BMW M3.

Another milestone in the history of the ‘Ring is the lap time registered by Hubert Hahne in 1966. In the touring car race on the eve of the German Grand Prix, Hahne lapped the Nürburgring in 9 minutes and 58.5 seconds in his BMW 2000 TI, and in so doing became the first man to duck under the ten-minute mark. His time matched that set by Juan Manuel Fangio in a Formula One racing car in winning the German Grand Prix just a few years previously.

The BMW Group has long used the Nürburgring as a test track for its production cars. BMW took over the workshop halls next to the ‘Ring in 1953 after the Veritas vehicle



factory went bankrupt, with BMW test engineer Ernst Loof heading up the company's Nürburgring operations. On 15 October 1954 the "Nürburgring testing site" became an autonomous department reporting directly to the Board of Management. Under Loof's management all series-produced vehicles were to be tested at the circuit. He was also handed a special assignment, which consisted of testing a "sports touring car" until it was ready for production. In 1959 Willi Martini took over the premises for his BMW business and workshop. However, the halls remained as a base for BMW for testing purposes and races.

In 1991 the BMW Group took over the facility in its entirety. At first the premises were also used as a support point for the activities of BMW Motorsport. Then, in November 2006, the modified and significantly expanded BMW M Testcenter Nürburgring opened its doors.

Today, the buildings accommodate 11 work spaces with lifting platforms, an axle measuring platform and an office with some 30 computer workstations, from which test results and reports can be sent over to development HQ in Munich and Garching in a matter of seconds. Today, all BMW, MINI and Rolls-Royce cars have to successfully complete extensive testing on the Nordschleife before they are given the thumbs-up for production. Indeed, according to experts it is here that BMW M cars are "endowed with their character".

The BMW M Testcenter Nürburgring is also where the BMW 'Ring Taxi is based. For many years now, professional drivers have taken passengers on a hot lap of the Nordschleife – and you can currently enjoy the experience in a 507 hp BMW M5. The team of drivers includes Hans-Joachim Stuck, Claudia Hürtgen and Sabine Schmitz. The BMW 'Ring Taxi service runs during tourist driver days when anybody can take their car or motorcycle – provided it is registered for road use – for a spin around the Nordschleife. A lap currently costs 19 euros.

These tourist days are nothing new, however. 80 years ago the princely sum of one mark for a motorcycle or three marks for a car (plus a charge of two marks for each person on board) would get you a lap of the 'Ring. Then, as now, normal road traffic rules applied.

For those at the helm of the Nürburgring it is essential also to have a secure foothold in non-motorsport activities. Indeed, running and cycling events take place on sections of the track and the surrounding area, with a 24-hour race for mountain bikes just one example. Plus, tens of thousands of music fans make the annual pilgrimage to the "Rock am 'Ring" festival – one of the largest of its kind in a German-speaking country.

So, to sum up: even after 80 years on the map, the Nürburgring has lost none of its magnetic attraction – least of all for motorsport enthusiasts. ■



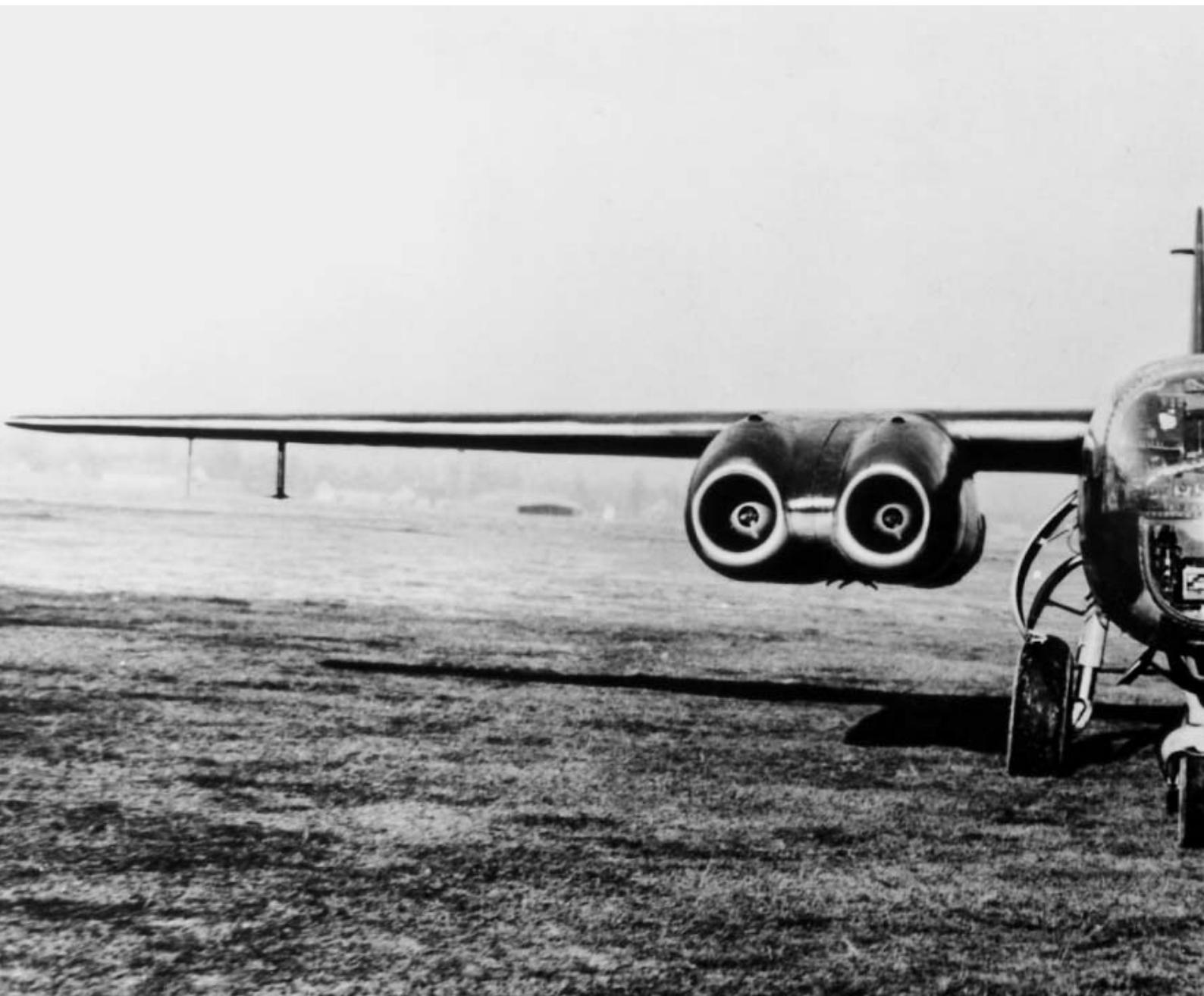
# The BMW 003 jet engine

In the late 1930s the aviation industry underwent a technical revolution as German and British engineers began the race to build the first jet engines. The new technology represented a quantum leap forward for powered flight. And at the dawn of the jet age BMW was a world leader in engine development.

Christian Pierer

Continuous improvements to airframes and engines throughout the first half of the 20th century brought a steady increase in aircraft flying speed. In spring 1939 a Messerschmitt Me 209 set a new speed record for a propeller-engined plane of 755 km/h, even if the purpose-built high-performance engine supplied by

Daimler-Benz – a DB 601 ReV unit delivering 2,770 hp – enjoyed a lifespan of just a few minutes. The record nevertheless marked a watershed since it demonstrated that, given the technological limitations of the day, speeds above 800 km/h were not possible using propeller or piston engines.



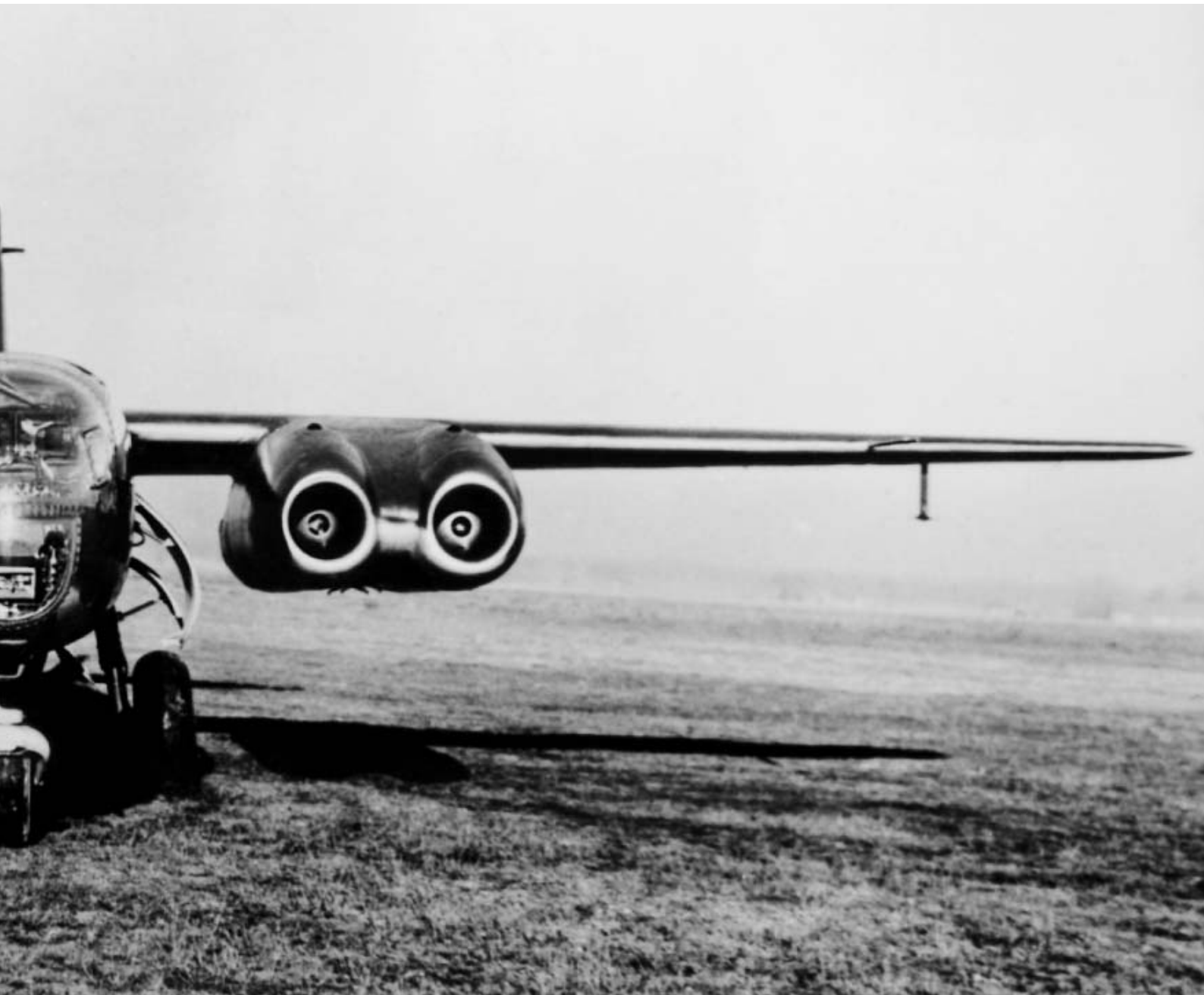
Engineers therefore increasingly turned their attention to alternative concepts of propulsion, one of which in particular was considered highly promising – the jet engine. In Germany, early development of this new technology was not carried out by one of the renowned aero engine manufacturers, but by Heinkel Flugzeugwerke AG. The company gave the task of designing the first German jet engine, the He S 3 B, to the young engineer Hans-Joachim Pabst von Ohain. This engine successfully passed its first rig test in 1938. As interest in the new propulsion concept grew, so the Reich Ministry of Aviation began awarding development contracts to the major German aero engine manufacturers from 1938 onwards. By now jet engine design had become a major focus of activity not just for Heinkel, but also for Junkers, Daimler-Benz, BMW and Brandenburgische Motorenwerke (Bramo). In the end, however, only BMW and Junkers survived,

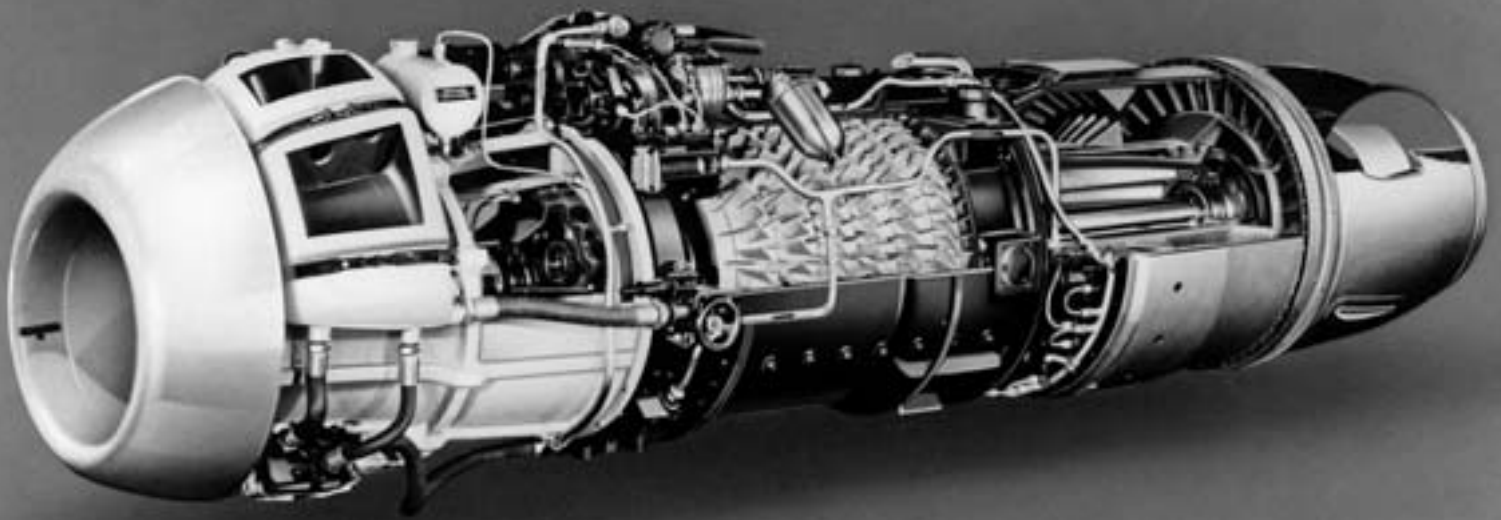
the two companies that successfully took jet engines to series production.

A key factor in the development of the first BMW jet engine was the takeover in 1939 of the company's rival, Bramo. Both BMW and Bramo had been working on their own separate engine designs since 1938. But Bramo, with its headquarters in Berlin, had made the greater progress. So after the takeover BMW decided to focus its entire engine development activities on Berlin and abandon work on the original BMW engine in favour of the P3302 project already underway at Bramo.

**The P3302 project was the starting point** for the company's first jet engine, the BMW 003. As the design of a jet engine was fundamentally different from that of the piston engine, the company had very limited experience to fall back on when starting development ▶

Below | Arado 234 with four BMW 003 engines, 1944.





Above | Cutaway drawing of the BMW 003 jet engine, 1945.

of the BMW 003. Even work on the compressor demonstrated to BMW engineers the magnitude of the challenge they faced with the new technology. Although two types of design were available – the radial and the axial compressor – the Göttingen Aerodynamic Research Institute (AVA) had shown the axial design to be fundamentally superior. The advantage of the axial compressor lay above all in its smaller profile, which therefore meant lower air resistance. The AVA not only carried out computations to prove this, but also built prototypes for a six-stage compressor. BMW then took over these design plans, adding a seventh compressor stage after several test runs.

But whereas BMW could depend on the expertise of other institutions for help with designing the compressor, when it came to developing the combustion chamber it was entirely on its own. For this reason the company was forced to rely on exhaustive testing as the basis for its design. In early trials, air was delivered by the turbocharger of a Bramo 323 aero engine. But because of the high throughput velocity of the air, it was found that combustion could only be sustained by creating a swirl effect inside the chamber. A further headache was finding a satisfactory method to inject the fuel. After much experimentation it was decided to construct a ring-type combustion chamber equipped with 16 fuel jets. Ignition was achieved by means of electrodes.

The turbine played a crucial part in the working of the engine. In the case of the BMW 003 the turbine was a single-stage design. Because of the high temperatures involved, great attention had to be paid to the heat resist-

ance of the materials used. Design of the turbine blades also proved a special challenge. Pressed from two-millimetre sheet steel, these were hollow in design and cooled by the air circulating within them. Since welding the blades to the turbine wheel proved unworkable, BMW successfully found a method using pin connectors.

But it took much longer than had been hoped to get all components working properly and have the first BMW jet engine live up to expectations. Between 1939 and 1941 the company built no fewer than ten prototypes, sporting the designations V1 to V10. In 1941, about two years after the start of development, one of these engines was ready for the test rig. But its static thrust of 150 kp was well below the 600 kp stipulated by the Reich Ministry of Aviation in its contract, a figure the Ministry was subsequently to revise to 800 kp. By making a few adjustments the development team succeeded in extracting a little more thrust, but by 1942 the engineers were forced to concede they had designed an engine with insufficient power. A comprehensive overhaul of the design was called for. In particular, it was hoped a substantial increase in output would be achieved by boosting air throughput by 30 percent. Finally the modifications paid dividends. In 1944, rig tests succeeded in producing endurance runs of 20 and even 50 hours with the required thrust of 800 kp. These results meant that nothing now stood in the way of series production, and BMW began manufacturing the engines that same year. The BMW 003 and the Jumo 004 were the only two production jet engines made by German manufacturers prior to 1945.



**Rig testing and trial flights** were an essential part of the development process for the BMW 003. But since the engine was a wartime project, the engineers were under considerable pressure and enormous time constraints to succeed. This inevitably led to overhasty testing. The maiden test flight of a jet-engined Me 262 on 25 March 1942, for example, used two BMW units that were far from flight-qualified. It was a risk consciously acknowledged by all involved. But shortly after take-off the compressor blades began to break up and the aircraft suffered double engine failure. Fortunately there were no fatalities. Since the test plane had also been equipped with a piston engine, the pilot was able to land safely despite the loss of both jet engines.

BMW was in no way deterred by such setbacks. Once comprehensive improvements had been made there followed further test flights in which the engine proved itself a success. In October 1943, for example, a BMW 003 was fitted to the hull of a Ju 88, which had been converted for use as a flying test rig. Specially installed instruments and controls enabled test engineers to monitor operation of the engine. In September 1944, less than a year after this groundbreaking and successful test flight, an Arado Ar 234 equipped with BMW engines reached a cruising altitude of 13 kilometres. With that the BMW 003 had shown itself to be an engine capable of functioning at high altitude. Test flights were conducted by the Reich Ministry of Aviation, the aircraft manufacturers and by BMW itself. For this purpose the company had a number of aircraft at its disposal. To begin with BMW used an airstrip at Berlin-Schönefeld, but it later moved its test flight department to Oranienburg before finally relocating to Magdeburg. On account of the war, however, relatively few flights were undertaken. Flying hours never exceeded 20 per month.

From 1944 onwards the BMW 003 unit was also tested in the low-pressure chamber codenamed "Herbitus" at BMW's Munich plant. The Herbitus facility could simulate altitude conditions up to 11,000 metres and flying speeds of Mach 1. The pressurised chamber of the test rig was effectively a horizontal cylinder 3.8 metres in diameter and 8 metres in length. In order to simulate conditions at various altitudes, fresh intake air was first compressed and then



Above | View inside a BMW 003 unit. Visible from left to right: combustion chamber with air blending fins, cooling stators and turbine, 1978.

cooled. This made it possible to achieve different atmospheric densities and temperatures ranging from +55° Celsius to -70° Celsius. As operation of the test facility required an extremely high energy input of up to 30,000 kW, testing was restricted to the night hours. In addition to testing BMW engines, the facility also conducted tests for the company's competitor, Junkers. Even in international terms the Herbitus facility was a pioneering achievement. Unsurprisingly, the Allies used the low-pressure test rig to inspect their own and expropriated German aero engines after the war. To begin with this testing was carried out at the BMW plant in Munich. Then in 1946 the entire test facility was dismantled and shipped to the USA.

**The latter years of the Second World War** were dominated in particular by the battle for the skies. While the Allies attempted to engineer the fall of the Third Reich by deploying huge fleets of bomber aircraft, the Reich Ministry of Aviation increasingly focused

Below left | Construction of the Herbitus low-pressure test facility in Munich, 1943-1944.



Below right | BMW designers planning the Herbitus low-pressure test facility, 1940-1945.





on aerial defence. This explains a marked increase in production of fighter aircraft in Germany from 1943 onwards. In addition to the piston-engined Fw 190 and Bf 109, one of Germany's key fighter aircraft was the Messerschmitt Me 262. Since the Me 262 was already equipped with jet engines, Germany effectively switched to jet-powered technology right in the middle of the war. The maiden flight of the Me 262 was made with BMW engines; but Jumo 004 units were used when the aircraft went into series production.

The BMW 003 was also used in conjunction with other aircraft. For example, a series of Arado Ar 234 prototypes were equipped with BMW engines. Early designs of this aircraft featured an unusual take-off and landing procedure. A tricycle dolly was attached to the fuselage for taxiing and take-off which was jettisoned once the plane was airborne. With retractable skids used for landing, this system accounted for a considerable saving in weight. Unfortunately it proved conceptually flawed, however, and eventually conventional landing gear was fitted. For power the Ar 234 relied either on dual Jumo 004 units on a team of two or four BMW 003 engines. Originally designed for reconnaissance work, the Ar 234 was converted to bomber capability when the war situation worsened. A total of 210 units were built by the end of the war.

With German military prospects deteriorating rapidly, last-ditch efforts were made to turn fortunes around. In September 1944, for

example, the Reich Ministry of Aviation invited tenders for the design of a new fighter aircraft – one built from simple and readily available materials. The production start date set by the Ministry was January 1945. Heinkel came forward with a design, the He 162, which satisfied many of the Ministry's stipulations. Power for the He 162 – the so-called Volksjäger or "People's Fighter" – was supplied by a centrally mounted BMW 003 engine. Test flights were conducted in December 1944. With raw materials in short supply, the aircraft's wings were made of wood. This led to a variety of problems. The use of inferior ersatz glue for the wings, not to mention other quality and construction problems, meant the He 162 never achieved its top speed before the war had run its course. The He 162 was the first aircraft to be equipped as standard with a BMW 003 engine. But with the collapse of the Third Reich imminent, the Volksjäger arrived too late to make a major impact on the German war effort.

BMW jet engine technology was not used in Germany alone. In 1944 the company entered into negotiations with an envoy representing the Japanese navy. On conclusion of the talks, the two partners signed a licence agreement which provided for the hand-over of the BMW 003 drawings and design documentation and their transfer to Japan in a U-boat. The Japanese engineers used the BMW plans to develop their own Ne-20 engine, a unit first tested in an aircraft in August 1945.



Left | An Arado 234 taking off, with two Jumo 004 engines, 1944.

Below | A Heinkel He 162 with BMW 003 engine, 1944.



With the intensity of Allied air attacks growing, the National Socialist regime was forced to relocate many of the industries vital to the war effort. One such case was the BMW engine development department, which was moved from the exposed Berlin plant to a salt mine near Staßfurt south of Magdeburg. In April 1945, when the American troops took control of Staßfurt, the US Army transported all complete engines and design documentation to BMW's Munich parent company. The company's top engineers were also forced to leave Staßfurt for Munich. When the war was over, the Americans withdrew from Staßfurt and handed control of the BMW premises to the Soviet troops, who enlisted all remaining engineers to continue developing the BMW 003, 018 and 028 engines for the Russian armed forces. Work on the BMW 018 proved particularly difficult because the Americans had taken all drawings and calculations with them. The engine parts therefore had to be redesigned from scratch. But once preliminary successes had been achieved, the Russians were sufficiently satisfied with progress to move the entire development facility and specialist workforce back to the Soviet Union on 22 October 1946. The German engineers were not allowed to return home until some years later, their expertise having been key to helping the Soviet Union develop its own aviation industry. The MIG-9, for example, was the first jet aircraft to leave this famous aircraft factory equipped with engines derived from the BMW 003.

German specialists were not just working for the Soviet Union, however. The western Allies also secured their cooperation. The Americans had all leading BMW designers brought to corporate headquarters in Munich for extensive interrogation. Hermann Oestrich, the man in charge of BMW jet engine development, was given the opportunity to continue his work in the USA. He accepted instead an offer from the French air ministry. In 1945 France recruited about 120 engineers with the aim of designing a new jet engine. Oestrich was appointed head of this group. His employees had previously worked for top German engine manufacturers such as BMW, Junkers and Heinkel. In 1948 the development team was ready to put the ATAR 101 engine through its paces for the first time on the test rig. Although it was a completely new development, certain elements of the BMW 003 featured in its basic design. In this respect BMW engineers also played a significant role in the development of the first French jet aircraft.

After 1945 BMW engine technology spread rapidly around the world. One key reason for this was that BMW engineers placed their expertise at the disposal of American, French and Soviet contractors. But former BMW employees also made an important contribution to the development of independent aviation industries in the two post-war German states. ■

# The development of CKD manufacture at BMW

The Annual Report of the BMW Group for the year 2006 lists, in addition to the international production facilities, six plants in which BMW vehicles are assembled. This principle of so-called CKD ("completely knocked down") production has existed at BMW since the 1950s.

Caroline Schulenburg



Many countries try to protect and strengthen their economies through tariffs or other import restrictions. Often the levies on the import of parts are lower than on complete machines or vehicles. For this reason, car manufacturers are among those resorting to the idea of shipping components instead of road-ready vehicles into countries with high import tariffs, and then assembling them locally. Two basic methods have evolved for this: CKD and SKD. CKD stands for “completely knocked down”. According to a defined level of disassembly, vehicle components are streamed off from the core production, exported to a foreign country as what are called

part sets and there put together in the CKD plant equipped to handle body shop work, painting and assembly.

SKD, or “semi knocked down”, assembly is a variant of CKD manufacture but with a lower degree of disassembly. In this case the body shop work and sometimes even the painting process is carried out at the home factory. The (painted) bodyshell is then exported and the technical assembly completed in the SKD plant in the foreign country.

The concept of exporting cars, not in complete form but in sets of parts, and only assembling them locally was known as long ago as the 1920s. As early as 1926 the Ford Motor Company AG and General Motors GmbH set up German subsidiary companies to assemble vehicles in Berlin and Hamburg respectively.

The first BMW vehicle to be assembled abroad was the Isetta. In the mid-1950s there was export potential for the BMW “bubble car” since at that time, apart from the Goggomobil, there was no competing model on European export markets. However, because it had four wheels, the customs authorities in various countries assessed the Isetta as a motor car, on which, compared with motorcycles, very high import duties were imposed. This meant a considerable increase in the selling price of the bubble car in the markets concerned. Because of these tariffs the Isetta was often priced higher than larger, locally produced cars and thus lost its competitive advantage. When several German companies announced that they were starting production of comparable microcars, the sales figures hitherto achieved on the German market came under threat. It was clear that a new method of exporting the bubble car was urgently required. So in March 1956 the sales director Hanns Grewenig called for “this vehicle to be exported either complete or else for assembly in foreign countries”.

The first plant to be set up for CKD assembly of the Isetta was in Britain. Due to the various costs entailed in exporting vehicles – the import duty alone for Britain stood at 33.3 percent – the list price of the BMW 250 Standard, which in Germany sold for 2,550 deutschmarks, was 415 pounds in Britain, equivalent to 5,104 marks. By comparison, the more comfortable Ford Popular was considerably better value at around 390 pounds. A further problem that arose on the UK market was the need for right-hand drive, which meant modifying the production process.

By establishing a CKD facility in the UK, BMW wanted not only to avoid British import duty on cars, but at the same time also to take advantage of Britain’s preferential status as an exporter to Commonwealth countries. By the early summer of 1956, negotiations with British companies for the commencement of Isetta assembly were in their final stages. However, there was still the problem of the high ex-works price. BMW therefore considered which parts of the Isetta could be manufactured in Britain itself, in order to reduce the freight and customs costs. In August 1956 a contract for the CKD manufacture of the bubble car was finally signed with Isetta of Great Britain Ltd, a company set up by a British businessman exclusively for this purpose. A three-wheel version of the Isetta, which was treated as a motorcycle for tax purposes, was developed in Munich specifically for CKD assembly in Britain. ▶



Left | Transporting BMW 700 bodyshells for assembly in Belgium.



Not all the plans for producing the Isetta in CKD form were to materialise. In autumn 1955 there were attempts at a strategic level to engage in a cooperative venture with a Japanese company to manufacture the CKD bubble car in that country, in order to avoid the 85 percent import duty. To convince the Japanese government of the sales potential of the Isetta, BMW offered to carry out large-scale market research in Japan. But setting up CKD assembly only made sense for BMW if the contract were to run for at least five years. In addition to Japan, a further Asian market was to be opened up in India. However, the detailed plans to produce the Isetta as a “people’s car” for the Indian market were never realised (see “Isetta goes to India” in MTL, issue 01/2007).

In the USA, too, there was interest in building Isettas on home territory. It was initiated by the Fairchild Group, which owned seven different factories in the aircraft industry. The group saw two major potential customers: one was government bodies, which by law were only allowed to use American vehicles, and the other was golf courses, which could hire out electrically driven Isettas to their customers.

Alongside the CKD production of Isettas in Britain, the bubble car, as well as the BMW 600 and BMW 700, were also assembled in Ireland, Uruguay, Argentina, Indonesia and Belgium. In Belgium the reasons for setting up an assembly plant were less of a fiscal nature, and more a way of sidestepping the volume-related import restrictions. Since each manufacturer was only permitted to import a specific number of vehicles, and the demand for BMW vehicles could not be met by the import quotas, assembly of the Isetta and the BMW 600 began in the spring of 1959, and of the BMW 700 in 1960, under the control of the Belgian general importer. Thanks to SKD output it was possible to raise sales from 90 vehicles per year in 1958 to over 6,000 units in 1963. The success in the Belgian market was chiefly attributable to the BMW 700. Local assembly made it possible to satisfy particular Belgian preferences with regard to equipment, trim, colour etc. without interrupting the production flow. The facilities, located between Antwerp and Mechelen (Malines), were conceived from the outset in such a way that they could, when necessary, be enlarged or adapted without any difficulty.

With the launch of some of the models of the “New Class”, assembly of the same model also took place in Belgium. The SKD plant not only assembled vehicles for the domestic Belgian market but also right-hand-drive vehicles for export to Britain. As part of its internationalisation strategy, in 1974 BMW AG set up its own sales company in Belgium and terminated the existing business relationship with the importer.

In the South American countries of Argentina and Uruguay, CKD or SKD production worked in a different way. The vehicles were imported almost fully assembled and only some individual components, such as the rear seat, were manufactured locally. In this way the rules on the importation of partially assembled vehicles could be satisfied without a large proportion of the parts having to be produced locally.

**From CKD production to “full plant”: the BMW factory in Rosslyn.** A special role was assigned to the plant in the South African town of Rosslyn. Originally the importer there had assembled vehicles from the Hans Glas company and then, after the takeover of Glas by BMW in 1967, it assembled BMW cars as well. However, in 1972 the importer, Johannes H. Pretorius, was threatened with

bankruptcy. BMW had to face not only the loss of the South African market, but also write-offs totalling 600,000 rand owed for tools already delivered. For this reason, in 1972 BMW founded a subsidiary company, BMW (South Africa) (Pty) Ltd, which took over the business of Praetor Assemblers, Euro Republic Automobile Distributors, and Euro Republic Spares.

Vehicles for the South African market had to be manufactured locally, since the import regulations required a high level of local content. At the time of the takeover the sales figures for BMW vehicles were pretty low, a fact that was also due to a poorly developed dealership network. To improve the situation, in addition to tightening up the sales organisation, a BMW model specially aimed at the South African market was to be manufactured at Rosslyn. ▶

Facing page | American actor Cary Grant with a BMW Isetta 300 Export on New York’s Park Avenue, late 1950s.

Below | The Rosslyn plant.

Bottom | Paint shop using water-based paint technology at BMW’s Rosslyn plant.





Above | Transporting CKD parts.

Below | Car production at the Thailand factory.

Bottom | The first BMW 520i (E 34) from Southeast Asia.



Initially the BMW 1804 and 2004 models were assembled at the Rosslyn plant exclusively for the South African market. From 1974 onward, two years after the launch of series production, the manufacture of models in the first 5 Series started in South Africa. Four years later the factory began production of the 7 Series, and in 1983 BMW finally introduced the 3 Series at the Rosslyn plant.

Until 1996 BMW cars in all the construction series were produced at Rosslyn exclusively for the local market. After the lifting of the export embargo, Rosslyn concentrated on the production of 3 Series Saloons. For the first time Rosslyn was now turning out cars not only for the local market, but also for export worldwide, especially to Japan, Australia, New Zealand, the USA and the countries of sub-Saharan Africa. In 1996 the status of the Rosslyn plant changed again. Whereas up to now it had been regarded as a CKD plant, it now became an independent and fully-fledged manufacturing facility within the BMW production network.

**CKD production of the new model series.** The CKD or SKD production of the Isetta, the BMW 600, the BMW 700 and the “New Class” models was concentrated in the European region and in some cases South America, but with the new model series introduced in the 1970s the focus shifted to assembly facilities in the Asian region. In 1973 a contract was signed with the Thai company YMC regarding CKD manufacture for the domestic market. The cars to be assembled were the models of the 3 Series.

In 1998 the BMW Board of Management decided to build its own CKD plant in Thailand. This facility was to supply the entire Southeast Asian economic area. In April 2000 the new plant in Rayong went on stream. At first BMW only manufactured 3 Series models here. In 2002 the programme was expanded to include the 5 Series, and two years later the 7 Series. In 2006 the plant additionally began assembling the BMW X3. Bodywork and assembly take place in the plant itself, but for painting work BMW uses an outside partner.

Beside Thailand, in the second half of the 1970s two further manufacturing facilities were set up in Asia. In 1975 the sales director made applications to build CKD plants in Indonesia and Malaysia. In both countries preliminary negotiations had already been completed with appropriate partners. The Indonesian government had banned the import of complete vehicles since January 1974, which meant that CKD assembly would bring actual additional volume and also prevent a loss of market share. The BMW importer operating in the country had signed an agreement with the Indonesia Service Company, which already had more than 15 years’ experience in vehicle assembly. In 1976 production began in Jakarta, initially of the 5 Series. In 1994, 3 Series models were added. The factory in Jakarta has its own body shop, paint shop and assembly line.

The situation in Malaysia was similar. The market for complete vehicles was closed due to the restricted issue of the necessary import licences. There was also the problem that fully assembled cars were subject to a high import duty and were thus no longer competitive. In Malaysia, too, assembly was organised through the domestic importer,





Above | Assembly line at the BMW plant in Chennai.

and models of the 3 and 5 Series were produced. Just as with CKD manufacture in Indonesia, in Malaysia, too, BMW did not have to make any financial commitment nor carry the sales risk.

With the start of CKD assembly in Egypt in 1974, BMW possessed, beside South Africa, a further assembly facility on the African continent. In 2004 its partner BAMC built a new factory near Cairo, equipped for bodywork, painting and assembly. In Egypt the 3 and 5 Series models are assembled, as well as the X3 and, since 2006, the long-wheelbase version of the BMW 7 Series.

**As well as building a BMW-owned CKD plant** in Thailand, in the 1990s there was another wave of expansion in assembly plants. By launching CKD production in the Philippines and Vietnam, BMW continued to focus on the Southeast Asia region. The part sets shipped from Germany were supplemented by locally manufactured components. The two new CKD plants were able to meet the growing demand in the Asian region. By 1994 almost half the BMW vehicles sold in Southeast Asia came from local assembly plants.

In the mid-1990s it was becoming clear that the sales potential in Latin America would grow as well. Next to Brazil, BMW's interest was chiefly in the Mexican market. But since no complete vehicles were allowed to be imported into Mexico, BMW had applied for a licence to assemble cars in that country, and in 1995, together with a local partner, had begun SKD manufacture at a plant near Mexico City. All three plants assembled the 3 and 5 Series models.

Assembly in Mexico and the Philippines ended in 2003 and the CKD plant in Vietnam ceased production in 2004.

The last assembly plant of the 1990s was a facility opened in 1999 in Kaliningrad, the Russian enclave on the Baltic. Here, with Avtotor as its local partner, BMW produces vehicles to be sold in the Russian Federation. X3, 5 and 7 Series models are built in Kaliningrad. The process in this case is SKD manufacture based on pre-painted bodysells.

In the new millennium BMW is expanding its presence in the Asian market. In the spring of 2003 the BMW Group and Brilliance China Automotive Holdings Ltd (CBA) entered into a joint venture for the production, sale and after-sales service of BMW vehicles in China. The People's Republic of China is considered to be one of the biggest growth markets for the automobile industry. After Germany and the USA, China is the most important market for the 7 Series models. In 2003 some 27,000 vehicles from the BMW Group were sold in the Chinese market, which represents an increase of 75 percent over the previous year.

In order to further strengthen its Asia strategy, BMW has built its own assembly plant in the southern Indian metropolis of Chennai. True to the notion that production follows the market, the assembly plant is intended to take advantage of the anticipated growth rate in the Indian car market. The 3 and 5 Series models that have been produced in Chennai since spring 2007 are destined exclusively for the Indian market. ■

# 30 years of BMW Driver Training

“The best safety feature you can fit in a car is a well-trained driver.” This is one of the mantras of BMW Driver Training, one which clearly reflects the mission statement of this custodian of road safety. For 30 years now customers have been taking BMW up on its offer to hone their skills at the wheel. And from day one of the first course this offer has also been open to non-BMW drivers as well. Indeed, it has often been among the drivers of other brands’ cars that the reputation of the BMW Group as a carmaker has blossomed most through the duration of a course: here is a brand which does not turn its back on customers as soon as the purchase forms are signed.

Niklas Drechsler

It was the realisation that – alongside the construction of extremely safe cars – promoting driving skills could also contribute to reducing the risk of accident that served as the trigger for the announcement of the first training courses. When what was then BMW Motorsport GmbH launched the “BMW Driver’s School” back in the 1970s, its aim was therefore to “bring together a better car with a better driver as effectively as possible”. And this

fundamental objective remains unchanged today. Now rechristened BMW M GmbH, for 30 years now it has offered an extensive training package for car drivers and motorcyclists seeking to perfect their expertise and skill. Since 1977 more than 200,000 people have enjoyed the benefits of BMW Driver Training – indeed, around 18,000 people take part in a total of 1,000 events every year in Germany alone.



It was back on 3 February 1976 that the BMW AG Board of Management took the decision to set up the Driver's School. That same year the necessary contacts were made to ensure that the idea would be professionally implemented. In August 1976 the then Managing Director of BMW Motorsport GmbH, Jochen Neerpasch, got together with Börries von Breitenbuch – Sports Secretary of the German Automobile Club (AvD) – to agree on a jointly conceived training plan. Von Breitenbuch had already built up two years of experience in running driver training courses with European rally champion and multiple Monte Carlo Rally winner Rauno Aaltonen. The Finn, nowadays known affectionately as the “Rally Professor”, joined forces with von Breitenbuch to develop the main outline of BMW Driver Training.

The two men took a two-pronged approach to driver training, tackling those situations which present problems for drivers on a day-to-day basis while at the same time turning knowledge gained in motorsport competition into a useful tool for the everyday driver. This included a focus on following the ideal line and hitting the right braking, steer-in and steer-out points – and this is one of the key elements in advanced BMW Driver Training courses today. With the pair having worked out the structure and content of the programme, it was a logical step for Neerpasch to install von Breitenbuch as Head of Training and Aaltonen as Chief Instructor.

On 22 April 1977 the BMW Driver's School turned out its first wave of graduates. BMW had supported the sports and racing driving courses initiated by the Hansa-Hamburg branch of the ADAC motoring organisation since 1958. The most prominent instructor on these courses – the precursors to the Scuderia Hanseat driving school – was world record-breaking driver and grand prix winner Hans Stuck. As the official press release at the time was keen to point out, Stuck's BMW 507 sports car had “a top speed of 220 km/h”. The focus of Stuck and his fellow instructors was on promoting talented young racing drivers. In the mid-1960s the Association of BMW Clubs organised the “Besser fahren auf BMW” (“Better driving with BMW”) training course, which was geared more squarely towards private car drivers. Just the title of these courses left participants in no doubt that they would favour “style over speed”. Each driver's responses at the wheel were rated in points awarded by the instructors, but their performance against the clock was not assessed. Hans Stuck was once again on the list of instructors, alongside other resonant names in 1960s motorsport such as Heinz Epplein, Toni Fischhaber and Hubert Hahne – who had already addressed the course participants in the foreword to the official programme brochure.

All of these training courses were held at the venue which still rates as BMW Driver Training destination no. 1 for customers and instructors alike: the Nürburgring Nordschleife. Then, as now, there was no better place to add to your driving expertise step by step, section by section, while at the same time recognising how much about the art of driving you still had to learn.

Participants in the courses which BMW supported prior to the establishment of its own BMW Driver's School used their own cars for the tests. By contrast, at the Driver's School – like BMW Driver Training today – the cars were generally provided as part of the package. The first training courses run by the BMW Driver's School in 1977 used the first-generation BMW 320i as its core model. The 125 hp cars had a specially adapted chassis, and were equipped with a 40 percent differential lock and a sports bucket seat for the driver. Since those early days, the breadth and variety of the train-



Above | Rauno Aaltonen – the first BMW Driver Training Chief Instructor – explains the basics of driving dynamics during one of the first courses in 1977.

Facing page | About to stamp on the brakes: in luxury saloons, as in any vehicle, it is vital to use full braking power in an emergency.

ing fleet has significantly increased and now comprises more than 250 cars and 100 motorcycles. Today, the BMW 130i, BMW 330i and MINI Cooper S form the core of the line-up, while the BMW M3 and BMW Z4 M Coupé are the stars of the M Training courses. Off-Road and Winter Training sees vehicles with the xDrive four-wheel-drive system taking the stage. When it comes to motorcycles, the BMW R 1200 R, BMW R 1200 GS, BMW F 800 ST and BMW F 650 GS are all on the list, while bikes like the BMW HP2 Enduro are used for special training courses. In the BMW Compact Training or BMW Motorrad Rider Training courses, however, there is also the option of using your own car or bike in some cases.

For the course participants of the 1970s there was more to the training than practical driving exercises. In addition to driving physics, a scientific examination of stressful situations in car racing and everyday road driving was incorporated into those first programmes. Presentations looking at stress at the wheel, healthy eating and driving psychology were firm fixtures in every BMW driver training course 30 years ago. Extended group drives in the early hours of the morning, fitness tests under the watchful eye of a qualified sports teacher and a breakdown assistance course were also part of the training package. Today, the Driver Vitality Training course continues this all-encompassing approach. ▶



Left | Keeping your balance: Rider Training at the BMW Enduropark Hechlingen.

Below left | Börries von Breitenbuch – the first Head of Training at BMW Driver Training – during practical exercises on one of the first courses in 1977.

Below right | The easiest place to learn vehicle control at the limit is on loose ground: BMW Winter Training.

Although there have been one or two changes to BMW Driver Training over the last 30 years, a theory section remains part of the courses. First and foremost, participants are introduced in a relaxed manner to the fundamentals of driving physics. This makes it clear relatively quickly – in theory at least – how your use of the pedals and steering wheel influence the responses of the car. The observations of Rauno Aaltonen continue to play a key role in the content of BMW Driver Training. Indeed, in his book “Revolution at the Wheel” Aaltonen explains with great clarity the effects on driving of the driver’s expertise and skill, the vehicle’s handling, and output and environmental factors such as the weather and condition of the road. Testing out and learning how

to apply all these principles in practice lies at the heart of every BMW Driver Training course.

Since the mid-1990s a modular system of training, which sees different training courses building on one another, has allowed both novice and experienced drivers to expand their knowledge step by step. BMW Driver Training begins with the Compact or Advanced Training course, depending on your level. You then move on to an Intensive Training module, before Perfection Training teaches you how to safely negotiate dangerous situations at motorway speeds. For those who master this level of driving, there is the alluring option of moving up to the highest level of BMW Driver Training: Race Track Fascination.





With helmets on, the participants learn how to find the ideal racing line on renowned race circuits.

Today, the brand's driver training portfolio spans a total of 23 BMW courses, four MINI courses and 17 courses for motorcycles. These include special Economy Training for more efficient driving, Winter Training, adventure tours through Namibia, the aforementioned Race Track Training at the Nordschleife, and motorcycle off-road training in the unique BMW Enduropark at Hechlingen. Plus, a special MINI training course can help you to meet the requirements for the German Motorsport Federation's national "A" licence.

Earlier this year, BMW Driver Training ushered in another exciting innovation: the BMW TrackTrainer. In phase one on a closed race track, demonstration cars fitted with the system follow the ideal line automatically. The drivers keep their hands resting lightly on the steering wheel and experience the car's automatic steering movements – and thus also its steer-in and braking points. A second phase sees the drivers at the wheel of a "feedback car". Rather than driving automatically, this car alerts the driver when he or she wavers from the ideal line. In phase three the full data on each participant's performance is analysed in the pits. The participant's line is compared on a computer with the pre-stored ideal line. This allows the instructor to give the drivers individual tips on how to enhance their driving style and further improve their car control.

Just as the courses making up the BMW Driver Training programme build on one another step by step, so the instructors are also trained in stages. In stage one the would-be trainers acquire all the skills and knowledge they need to supervise BMW Compact and Advanced Training, or MINI Starter Pack training courses. Passing stage two of instructor training qualifies a

participant to oversee BMW Intensive Training. And the top level of "trainer training" equips its graduates to take the helm for special Race Track Training courses. In addition to technical knowledge, a high level of driving skill and experience with BMW Group products, the instructors also have to meet personal requirements which confirm their ability to pass on their expertise effectively to the drivers on their course. ■

Above | Driver Training in the mid-1980s: learning how to perform a controlled drift in a second-generation BMW 3 Series.

Below | Final tips from the professional. On sand and stones, slopes and the flat, participants on BMW Rider Training courses are given professional instruction.



## Dates and events

### July 2007



05 – 08 July 2007  
10th Silverta Classic / Montafon (Austria)

06 – 08 July 2007  
BMW Motorrad Days / Garmisch-Partenkirchen (Germany)

21 – 29 July 2007  
2,000 km through Germany / Mönchengladbach (Germany)

24 – 28 July 2007  
Ennstal Classic / Gröbming (Austria)

### August 2007



16 – 19 August 2007  
Sachsen Classic / Zwickau – Dresden (Germany)

17 – 19 August 2007  
Rolex Monterey Historic Automobile Races / Monterey (USA)

31 August – 02 September 2007  
Goodwood Revival Meeting / Goodwood (USA)

31 August – 03 September 2007  
Rolex Vintage Festival presented by BMW / Lime Rock (USA)

### September 2007



12 – 16 September 2007  
Creme 21 Youngtimer Rallye / Various cities (Germany)

### October 2007



04 – 07 October 2007  
Geneva Classics / Geneva (Switzerland)

### Preview Issue 03.2007

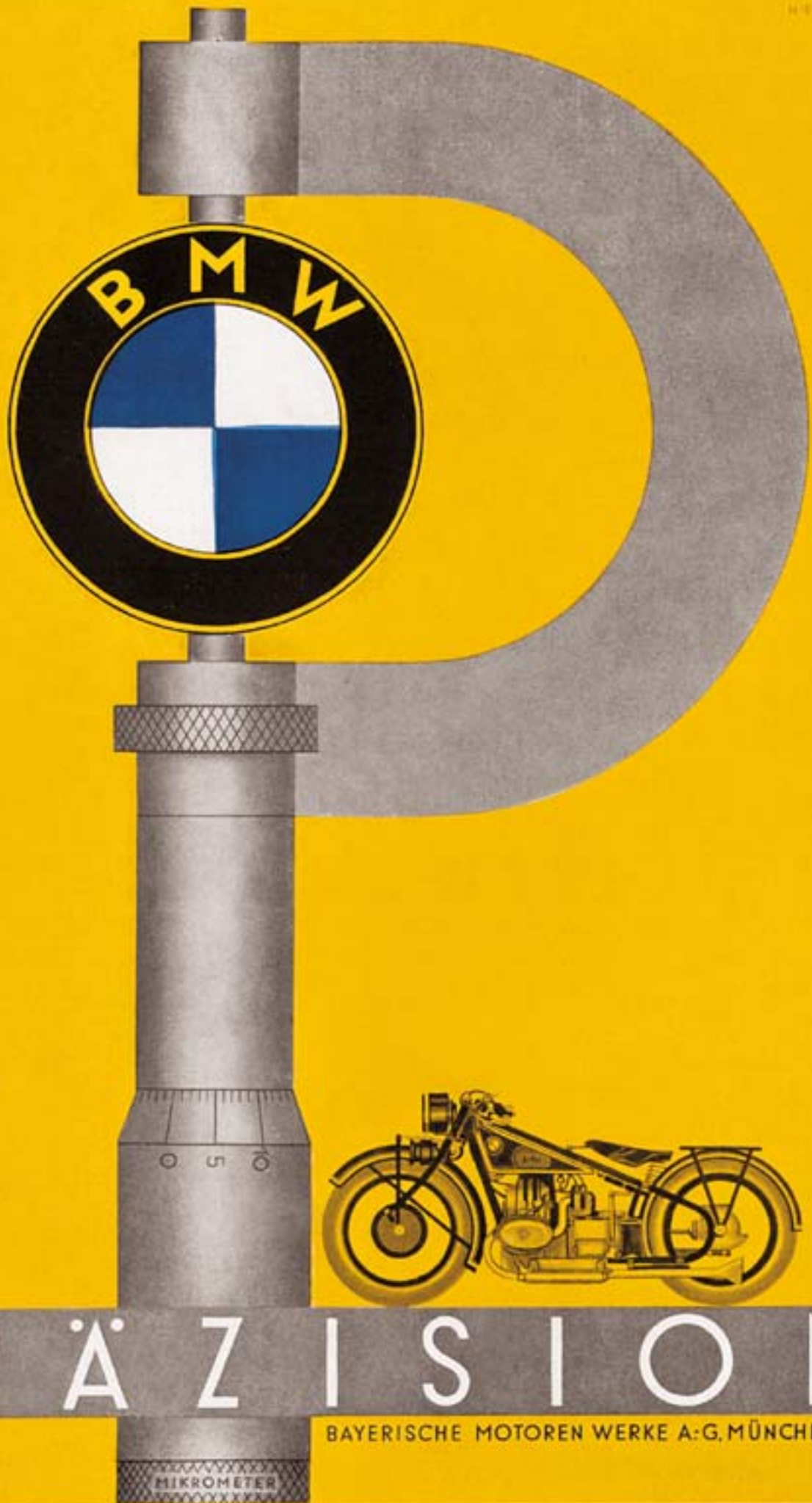


- > The history of BMW automobiles
  - > BMW Welt: the brand's experience centre
  - > The history of lightweight design at BMW
  - > "Tiepolo": BMW and art
- And much more

## Publication details

Responsible: Karl Baumer  
Address: BMW Group Mobile Tradition  
Schleißheimer Straße 416 / BMW Allee  
D – 80935 München  
Web: [www.bmw-mobiletradition.com](http://www.bmw-mobiletradition.com)

Images: BMW Group Archives, Oliver Beckmann (cover, 4, 16-23), Max Kirchbauer (11)  
Concept / Realisation: von Quadt & Company  
Reprographics: Foag & Lemkau GmbH  
Printing: Alfred Aumaier Offsetdruck  
Production management: BMW AG, Print Management



# PRÄZISION

BAYERISCHE MOTOREN WERKE A-G, MÜNCHEN 13

MIKROMETER

... und wieder siegte

im Nürburgring-Rennen

auf Europas klassischer Prüfstrecke



**3. Lauf um die Deutsche Motorrad-Straßenmeisterschaft 1950**

Soloklasse 500 ccm

**Georg Meier**  
„Wiggerl“ Kraus

**SIEGER und TAGESSCHNELLSTER**  
**ZWEITER**

**121,6 km/Std.**  
121,1 „ „

Kompressorlose Wertung

**Walter Zeller**

**SIEGER**

**112,7 km/Std.**

Seitenwagenklasse 600 ccm

**Klankermeier/Wolz**

**ZWEITER**

**106,1 „ „**

Seitenwagenklasse 1200 ccm

**Schäfer/Höller**

**SIEGER**  
**ZWEITER**

**102,1 km/Std.**  
100,6 „ „

**Seppenhauser/Wenzhofer**

swefly