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Mobile Tradition live

Facts and background

Anniversaries in the year 2003

90 years	Founding of the Rapp Motorenwerke GmbH
80 years	BMW's first motorcycle is unveiled in Berlin
75 years	Takeover of the Eisenach car factory
30 years	New BMW plant opens in Dingolfing
25 years	BMW M1 production launch
20 years	Victory in the Formula One World Championship

BMW 303: the start of a long tradition. Page 08

Stages of the trip to Iran in 1956.

1956: to Tehran with 12 horsepower

In the 1950s, a journey from Germany to Iran was tantamount to a world trip – especially when you consider the engine of the R25/2 that propelled the two student companions on their way. 12 bhp had to carry them both all the way to Persia.
But their confidence in the machine was such that they didn't even take a spare spark plug along. The family and friends of Hans Winter and Koorosh Eghbal could only shake their heads at such a bold enterprise. The destination was Eghbal's family in Meshed, Iran. It was a formidable challenge for both men and machine. But barring a few minor problems that were solved on the spot – often thanks to a great deal of improvisation – this two-wheeler proved remarkably resilient.
Winter's return journey, during which he visited the sights of southern Europe, covered 9,000 kilometres – half as long again as the outbound trip. He managed it in three weeks. By the time he got back the odometer had clocked up 15,500 kilometres more than at the outset of this epic journey.

Dear Readers,

When the first edition of Mobile Tradition live landed on our desks hot off the press, we were admittedly a tiny bit proud. We had hoped for a little praise from you, but would never have dreamed of such a positive response. It has reinforced our commitment towards the continuing advancement of Mobile Tradition live.
The last three months have been a very eventful time. Techno Classica, Europe's premier classic car show, notably set the pulses of aficionados racing once again. On display at the BMW Group Mobile Tradition stand was a great deal of what makes up the fascination which this subject exerts on friends of the BMW brand. From our point of view, the primary aim was being able to communicate with you. Thus several discussion rounds provided an opportunity to talk about the key issues revolving around heritage cultivation. Particular attention was devoted to parts supply, which is, after all, one of the crucial components of classic model upkeep today and an area to which BMW Group Mobile Tradition is strongly committed. From our own experience of looking after our vehicle collection, we know only too well the indispensable role played by expertise and the availability of spare parts in safeguarding the enjoyment of historical models – reason enough to present this theme, starting on page 12, as the main focus of the current edition of Mobile Tradition live.
We also have a special contribution lined up for our motorcycle devotees: a report on an adventurous trip from Germany to Iran on a 1950s BMW R 25/2. Get geared up for plenty of excitement along the way!
Here's wishing you a pleasant journey into the living past.

Read and enjoy!

Holger Lapp
Holger Lapp, Director of BMW Group Mobile Tradition

BMW's first six-cylinder for a car was mounted in the BMW 303.

Contents Issue 02.2003

Publication details

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Dates and events

July 2003

3 to 6 July 2003 / Montafon (A)
Silvretta Classic
Historic Alpine rally through the Austrian massif.

4 to 6 July 2003 / Garmisch-Partenkirchen (D)
3rd International Bikers´ Meeting
Exhibition and rally – a must for fans of historic two-wheelers.

11 to 13 July 2003 / Goodwood (GB)
Goodwood Festival of Speed
Exhibition and races on the site of famous historic events and the new Rolls-Royce plant.

19 to 27 July 2003 / Germany (D)
2,000 km through Germany
Traditional classic car rally.

August 2003

13 to 17 August 2003 / Zwickau-Dresden (D)
1st Saxony Classic
Vintage rally through Saxony with an anticipated 150 classic cars participating.

September 2003

4 to 7 September 2003 / La Roche (B)
41st annual meeting of BMW Club Europa

Facts I Fakten I Faits I Fatti

Mille Miglia 2003

Brescia. Series winner BMW rolled up for this year's edition of the Mille Miglia with royal support: King Carl Gustav of Sweden was at the wheel of a BMW 328 Mille Miglia Touring contesting this classic rally that leads from Brescia via Ferrara to Rome and back to Brescia. The highly traditional event, first staged 76 years ago, runs through the marvellous landscapes of northern and central Italy, drawing hundreds of thousands of spectators to the roadside. Eligible for participation are models which have competed in the classic Mille Miglia at least once between 1927 and 1957. This year's event took place from 22nd to 25th May. Last year the Mille Miglia counted 370 entrants.

Apart from King Carl Gustav of Sweden with his co-driver Prince Leopold of Bavaria, there were a further 21 BMW teams lining up for the race with a total of nine cars from BMW Group Mobile Tradition and 13 private BMWs. The majority of these participants were in BMW 328s, including historically significant models such as the BMW 328 Mille Miglia Roadster. The absolute highlight was the triumphant car of the 1940 Mille Miglia, a BMW 328 Mille Miglia Coupé with bodywork by Touring. In 1940, Huschke von Hanstein with co-driver Walter Bäumer had steered this aerodynamic racer along the 1,503-kilometre course in a record time of eight hours, 54 minutes and 46 seconds to cross the finishing line in Brescia as winners. Apart from the contingent of BMW 328s, there was also a BMW 507, a Veritas, and even a BMW Isetta participating in the race. Rock star Gianna Nannini drove a BMW 327 Cabriolet. For the spectators, it offered another exciting cross-section of BMW's sporting past in action on the road.

Overall victory went to the Sielecki – Hervas team of Argentina in a Bugatti T 23 Brescia. The women's category was won by the BMW team of Boni – Barziza driving a BMW 328, while the constructors' trophy was taken by Fiat, with BMW in ninth place. Further information at http://www.millemiglia.it/news2003/mm2003.htm.

New internet presence

BMW Group Mobile Tradition launched its new internet presence in April 2003. All key information relating to the theme of "BMW Mobile Tradition" can be accessed here. Each area of competence of the heritage division is introduced, along with its particular tasks. The Historical Archives, for example, not only allow internet users access to the archives´ search machine, but also enable them to download the order form to apply for an official certificate for a historical model.

Further highlights are the Historical Collection and the self-drive car hire programme. Anyone interested in hiring a car can obtain all the information necessary to get behind the steering wheel of one of our historical models.

For owners of classic models, the online parts catalogue is an indispensable and convenient aid to tracking down spare parts.

Why not click by some time!
www.bmw-mobiletradition.com
www.historicalarchive.bmw.com

Review Techno Classica 2003

Munich/Essen. Techno Classica, held in Essen and for years the most important gathering place for fans of classic vehicles at the start of the season, was another resounding success this year. Notwithstanding the general economic downturn and the war in Iraq, the show proved an even bigger draw than before, having rarely seen so many visitors over its four-day duration. In all, 109,000 experts and aficionados turned up.
BMW Group Mobile Tradition again played a key role in the success of the event. Hall 12, arranged in conjunction with the BMW, MINI, Rolls-Royce and Glas brand clubs, as well as the Veritas register and the Eisenach car museum, even drew words of praise from the competition. The BMW Group Mobile Tradition stand was dedicated primarily to the theme of convertibles against a delightful mountain backdrop, as well as placing special emphasis on BMW's anniversaries "80 Years of BMW Motorcycles", "25 Years of the BMW M1" and "20 Years of the Formula One Championship".

As always, the theme of "Parts and Service" with highly informative exhibits attracted keen interest.

BMW Group Mobile Tradition's presence was complemented by a press conference in the form of a discussion round, as well as two further rounds of talks. In the first, the heads of the heritage divisions of Daimler Chrysler, Audi, Porsche and BMW discussed the significance of heritage cultivation for their respective companies and customers.

In the second discussion round, representatives of supplier companies talked about the problems of supplying parts for historical models. Both discussions were transmitted live into the exhibition hall. They are also being streamed on the internet for several months at the following address: www.auto-managerTV.com.

BMW Group Mobile Tradition's stand at Techno Classica in Essen: Bavarian flair in Germany's former industrial heartland.

Goodwood Festival of Speed 2003

Goodwood. Next to the Mille Miglia and the Concorso d'Eleganza Villa d'Este, the Festival of Speed held in Goodwood in southern England ranks among the top events in the 2003 classic calendar for BMW Group Mobile Tradition. To mark the Festival's tenth anniversary, the heritage department of the BMW Group will be present again with an array of treasures from its Historical Collection. From 11th to 13th July 2003, BMW motorcycles as well as sports and racing cars will be out on the race track of the historic grounds of Goodwood House, driven by big names from the world of motorsport.

The Goodwood Festival of Speed enjoys an outstanding reputation among motor racing fans. This is the only venue where spectators can experience 100 years of racing history in action. After drawing crowds of 25,000 in 1993, its inaugural year, 2002 saw more than 130,000 visitors flocking to witness motorcycles and sports cars of all classes and ages battling for the best times on the 1.2-mile circuit.

Three anniversaries form the core of BMW Group Mobile Tradition's activities in 2003. The Festival of Speed provides the perfect setting for celebrating "20 years of the Formula One Championship", exemplified by the Brabham BT 52 – BMW F1 in which Nelson Piquet won the championship in 1983 and the latest WilliamsF1 BMW FW25, driven by Juan Pablo Montoya.

The appearance of a BMW M1 Procar represents the racing history of this outstanding BMW sports car launched 25 years ago. In addition, numerous BMW motorcycles will be in action, bearing witness to the Munich company's 80-year tradition of two-wheeled production.

Apart from the cars and motorcycles out on the race track in 2003, a broad selection of models will also be on display in the BMW Group Mobile Tradition pavilion. A range of accessories for sale will round off the attractions laid on for visitors to the Goodwood Festival of Speed. Further information about the event can be found at www.goodwood.co.uk.

Silvretta Classic 2003

Montafon. Few regions of Europe offer such a stunning panorama for a classic car event as the Montafon valley in Austria. The Silvretta Alpine road takes you up to a grand altitude of more than 2,000 metres above sea level. Twisty, stunning mountain roads alternate with picturesque Alpine valleys to make up the spectacular scenery for an exceptional classic rally.

From 3rd to 6th July 2003, owners of some 150 cherished four-wheeled classics will be able to savour this wonderful landscape and the welcoming Montafon region.

The course covers around 450 kilometres divided into three daily stages. During these, participants have to complete a total of 16 classification trials, 18 time checks and four transit controls. BMW Group Mobile Tradition will once again be involved in the Silvretta Classic with a wide range of historical cars, including, for example, a BMW 507 Roadster taken from its collection of some 400 classic four-wheelers.

Anniversaries in BMW´s corporate history

90 years

Founding of the Rapp Motorenwerke

On the northern edge of the Oberwiesenfeld, Munich's first airfield, Karl Rapp and Julius Auspitzer founded the Karl Rapp Motorenwerke GmbH on 28th October 1913. Located on the site of the recently liquidated Flugwerke Deutschland GmbH, the new company was designed to manufacture and distribute "engines of all kinds, in particular internal combustion engines for aircraft and motor vehicles". The sole shareholder of the engine construction company was Consul General Auspitzer. Karl Rapp ran the business operation.

Several aero-engine prototypes were designed at the Rapp works, none of which, however, made it into production due to structural weaknesses. In July 1917, the facilities, patents and company site were incorporated into the Bayerische Motoren Werke GmbH, and the Rapp Motorenwerke were subsequently closed.

80 years

BMW's first motorcycle unveiled in Berlin

BMW first presented its R 32 at the Berlin Motor Show held from 28th September to 3rd October 1923. This is not exactly a new discovery, yet there is ongoing confusion regarding this event since the majority of sources cite Paris as the birthplace of BMW's motorcycle heritage. Just how this Parisian myth was debunked reads a bit like a detective story.

The fact is that, for decades, the Paris Motor Show which took place at the beginning of October was named as the launch venue. The first source in question is an unpublished text marking the 20th anniversary of BMW motorcycles.

In an interview with Rudolf Schleicher, who in 1923 was working out plans for the production launch of the R 32, he mentioned that the R 32 had been unveiled in Paris. That seemed to indicate beyond doubt that the debut of the R 32 must have taken place in Paris, and that assertion was subsequently not called into question.

In the run-up to the 75th anniversary of BMW motorcycles, extensive research was carried out in the archives and library of the Deutsches Museum in Munich. The first surprise was that there were numerous mentions of the R 32 being presented in Berlin, and of this motor show having already opened its doors on 28th September. A glance at the list of exhibitors and reviews of the event in the motoring press definitively supported this.

It was thus clear that BMW had first presented the R 32 in Berlin, yet it was still possible that the motorcycle had also appeared at the Paris show.

The delivery book records that two motorcycles had initially been sent to the Berlin Motor Show before being passed on to a Berlin dealer for sale. No mention was made of Paris, however. Research undertaken by colleagues at BMW France similarly failed to unearth any mention of Paris. Unfortunately no extant catalogue of exhibitors at the Paris Motor Show could be found, not even in the National Library of Paris. That would have provided the crucial missing piece of the jigsaw puzzle that could have shed light on the matter. The search for it had virtually been abandoned when the archivists at DaimlerChrysler Classic mentioned that they had a copy of the very catalogue. A subsequent search showed that BMW had not been registered as an exhibitor.

This provided the ultimate proof that the debut of the R 32 had, for decades, been erroneously attributed to Paris rather than Berlin.

75 years

Takeover of the Eisenach car factory

The "new" BMW AG had been established in 1922 by Austrian financier Camillo Castiglioni to include the "manufacture of automobiles" as well. Attempts to develop and build cars, however, were not systematically carried out in the years that followed and ultimately remained uncompleted.

In 1928, BMW had a surprising and excellent opportunity to gain a foothold in the flourishing car market through the purchase of the Eisenach car factory, also known as the DIXI-Werke. Only the previous year, the factory had concluded a licensing contract with the Austin Motor Company allowing them to manufacture the successful small Austin Seven for the German market.

For this purpose, the factory facilities were adapted to "assembly-line production" – a revolutionary method for the time. Thus on 28th October 1928, at a cost of 1 million reichsmarks, the greater part payable in shares, BMW acquired a modernized automobile factory which was turning out an attractive and affordable small car. It was the perfect entry into the world of car manufacturing.

30 years

New BMW plant opens in Dingolfing

Following the takeover of Hans Glas GmbH in Dingolfing in 1967, BMW AG transferred some of its car manufacturing facilities from Munich to its Lower Bavarian subsidiary in 1968. It soon became clear, however, that the capacities there would not be adequate for the planned expansion of car production.

Over a period of three years, therefore, a second BMW plant was erected on a site of some 600,000 square metres in the direct vicinity of the first Dingolfing factory. The official opening of the production facilities took place on 22nd November 1973 in the presence of numerous guests of honour. By this time, the new Plant 2.4 had already proved its efficiency: just two months previously, BMW's production director Hans Koch had taken delivery of the first car to emerge from the new factory – a red BMW 520.

Chronology of the Dingolfing plant:
02 Jan 1967: Takeover of Hans Glas GmbH
01 Jan 1968: Component production for cars and motorcycles
09 Nov 1970: Cornerstone ceremony with Alfons Goppel
27 Sep 1973: First car comes off the production line
22 Nov 1973: Official opening of Plant 2.4

25 years

BMW M1 production launch

BMW unveiled its new high-performance BMW M1 sports car at the Paris Motor Show on 5th October 1978. Under the direction of racing driver Jochen Neerpasch, the newly-fledged BMW Motorsport GmbH, in collaboration with several external partners including Lamborghini, had produced a racer which has lost none of its fascination to this day.

Though it was conceived as a base vehicle for motor racing, this objective was only met to a limited extent since setbacks in its development delayed production readiness and with it the hoped-for homologation. But the Procar race series, specially launched for the BMW M1 and involving the best Formula One drivers in identical M1s battling for victory, will remain unforgotten.

Even 25 years after its debut, the street version of the BMW M1 with 277 bhp and weighing just 1,300 kg, of which only 401 units were built up to 1981, still ranks among the most dynamic sports cars of all time. Long since established as a classic of recent motoring history, most of the BMW M1 mid-engine sports cars have survived to the present under the solicitous care of devotees of extraordinary automobiles.

20 years

Victory in the Formula One World Championship

“A sensational triumph for BMW and Brabham at the World Championship final in South Africa on 15th October 1983” ran the exultant banner headline that marked the beginning of BMW’s very own chapter in the history of Formula One.

The success of the team, which was made up of British and Bavarian members, was the crowning endorsement of the commitment with which BMW had entered the top echelon of motor racing.

Behind this triumph were a raft of famous names including, for example, Bernie Ecclestone, Gordon Murray, Paul Rosche and, of course, Nelson Piquet, the man behind the wheel of the victorious car.

The first Formula One World Championship title in the history of the Bavarian company was made possible by a vehicle driven by a powerful BMW turbo engine which was outstanding for the time. Thanks to superior powertrain technology, the prized crown of motorsport thus went to a German car manufacturer again – the Bayerische Motoren Werke of Munich – for the first time since the championship victories claimed by the legendary Silver Arrows of Mercedes-Benz.

BMW Group Mobile Tradition areas of competence

Archives

This is where all information relating to the history of the company, its brands and its products is gathered and stored. The Archives are the main port of call for all BMW departments requiring historical information of any kind.

The same goes for journalists, writers, historians and all those interested in the heritage of the BMW Group and its products. Research can be carried out from home via the internet by logging onto: www.historicalarchive.bmw.com

BMW Museum

The BMW Museum presents the past, present and future of the BMW brand within the context of the relevant social and historical era. It was inaugurated in 1973 as the first museum of its kind. Today, hundreds of thousands of visitors every year come to the museum’s changing exhibitions to learn about the BMW company and experience the fascination of the BMW brand.

Parts and Accessories

This department guarantees a comprehensive supply of parts for the faithful restoration of BMW classics. 15 years after production has been phased out, owners of historical models are supplied with all the necessary spare parts, now numbering several tens of thousands in total. Repair guidelines are also provided for the models.

Restoration job in the workshop of BMW Group Mobile Tradition.

Vehicle collection

At the heart of BMW Group Mobile Tradition is the Historic Collection. It contains more than 400 cars and 170 motorcycles, as well as numerous aircraft, motorcycle and car engines, all the way to the latest Formula One power units. The involvement of these vehicles in numerous national and international events is overseen by the operations management department. Maintenance and restoration work on these classics is undertaken in the workshop of BMW Group Mobile Tradition.

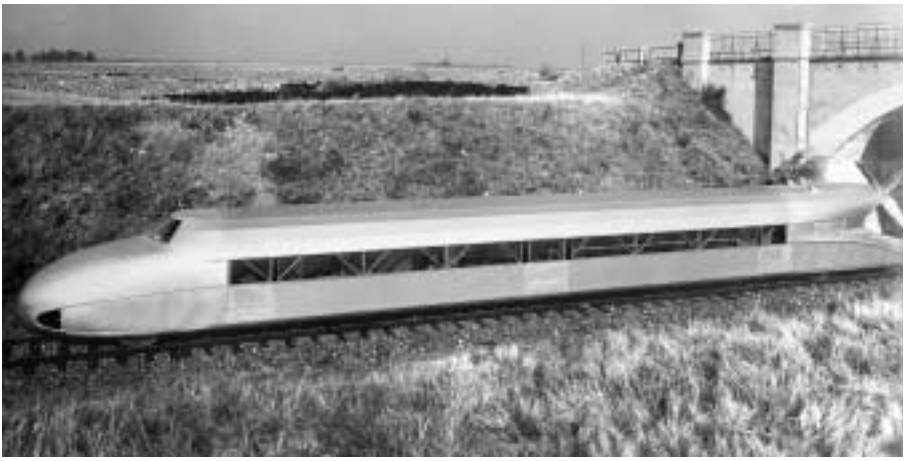
Clubs, events, communications

Around the globe, BMW Group Mobile Tradition takes part in events and exhibitions in the classic car and motorcycle scene, particularly those relating to the BMW Group’s past, such as Techno Classica in Essen, the Concorso d’Eleganza Villa d’Este or the Goodwood Festival of Speed. To this end, the division supports some 180 BMW clubs, stages numerous events of its own, and issues publications on BMW’s motoring heritage.

The Rail Zeppelin – record trip with BMW aero-engine technology

It's a highlight of any model railway set, and many regard it as the precursor of the Transrapid high-speed train. The enduring popularity of the Rail Zeppelin is remarkable considering that, after just a few hundred test kilometres, the world's fastest track vehicle of the time was jettisoned for reasons of transport policy.

by Fred Jakobs



The Rail Zeppelin on a test ride: "Like a vision from the distant future" was the headline in BMW's in-house newsletter.

Engineers had long pondered the possibility of high-speed trains. As early as 1903, a three phase powered railcar developed by AEG and Siemens recorded a speed of 210 km/h. However, as this vehicle's output of 3,000 bhp required a disproportionately high amount of energy, the project was not pursued any further.

Almost three decades later, engineer Franz Kruckenberg struck out on a different path. He floated the idea of a propeller-driven railcar – float being the operative word, as initial plans envisaged a suspension railway. But the project did not materialize as the costs of laying down new routes for it would have gone beyond any reasonable scope. And so Kruckenberg decided to demonstrate the advantages of sophisticated aerodynamics and systematic lightweight construction on conventional tracks to begin with.

The first test vehicle was ready in 1929. Its purpose was to verify once again that the propeller-drive concept was workable. As a test track, a virtually straight, unused, eight-kilometre stretch of track between Hanover and Burgwedel was selected. In April 1929, the first test rides were launched with twin 230 bhp BMW IV aircraft engines driving the train. When the far from aerodynamically perfect vehicle logged a speed of 175km/h, Kruckenberg saw his concept endorsed and started work on the construction of a production version in collaboration with the Aerodynamic Research Institute in Göttingen.

In 1930 the train was assembled in Hanover-Leinhausen and christened "Rail Zeppelin" by the workforce. Its framework comprised a skeleton of tubular steel covered with fireproof-impregnated canvas. Driving it was now a 600 horsepower BMW VI aero-engine which, like the propeller, was tilted slightly upward to increase pressure on the rails.

On 25th September 1930, the "Rail Zepp" set out on its maiden journey. On the short length of track, the 180 km/h mark was exceeded before the continuously accelerating train had to be slowed down and brought to a halt. In May 1931, the Rail Zeppelin then made its first journey on Germany's regular rail network. Along a stretch of some 20 kilometres, it achieved a speed of 205 km/h, just below the record established in 1903, which continued to stand. It was nevertheless an encouraging result, and Kruckenberg was keen to test his invention over longer distances.

On 21st June 1931, the Rail Zeppelin embarked on its legendary ride from the Hamburg district of Bergedorf to Berlin. The 257-kilometre distance was completed in a mere 98 minutes. Along a 12-kilometre section it reached 230 km/h to set up a new world record which endured for almost 25 years. The train subsequently travelled around Germany, attracting thousands of curious onlookers.

Although the Rail Zeppelin had passed the acid test, Germany's national railway remained sceptical. For one thing, a propeller drive was deemed too dangerous. For another, such a fast train would, with existing braking technology, be difficult to integrate into a railway network geared to a top speed of 120 km/h and into the established railway timetable. It was for these reasons that the concept was turned down and the project scotched. The record-breaking train itself was sent to the scrappers' yard in 1939, leaving the scale model versions as the only means of seeing the Rail Zeppelin travelling at full tilt today.

The Rail Zeppelin

Year of construction	1931
Unladen weight	18,600 kg
Length	25.3 m
No. of axles	2
Wheelbase	19.6 m
No. of passengers	up to 40
Engine	BMW VI
Displacement	46.9 l
Output	580 bhp
Consumption	71.5 l / 100 km

Parked at Berlin's Grunewald station following its record attempts.

Launch of a long tradition

70 years ago – BMW 303, the first six-cylinder model

For the Bayerische Motoren Werke the BMW 303 was a revolutionary vehicle, not merely because it was powered by the first automobile six-cylinder engine in BMW history. It also featured several other important technical innovations, as well as sporting the very first BMW “kidney grille”.

by Walter Zeichner

With its first cars of the 3/15 PS und 3/20 PS model range, BMW had bucked the trend of the economically straitened period of 1929 to 1933 and, unlike many other car manufacturers, launched a successful start to its automotive history.

The tried and tested small cars built under licence from Austin, along with the extensively redesigned 3/20 PS, came off the Eisenach production lines in more than 23,000 copies by the time they were phased out in March 1933.

However, by 1931 the decision had already been made not to limit production to the small car category but to develop a technically more sophisticated model powered by a small six-cylinder engine. This was part of a cooperative agreement between BMW and Daimler-Benz, which gave BMW the market segment below the 1.3-litre displacement capacity and Daimler the category above this class. Originally there were two proposals put forward for the engine of this

Cover picture from a BMW 303 brochure of 1933.

new model. BMW engine constructor Max Friz had designed a state-of-the-art unit in which he aimed to apply numerous insights from his longstanding experience of aero-engine construction. Details such as an aluminium crankcase or overhead valves in the detachable cylinder head were only used in extremely high-performance engines at the time, and were accordingly costly to produce.

At the other extreme Martin Duckstein, a former colleague of Max Friz who had in the interim moved from Munich to Eisenach as head of construction, designed a very simple six-cylinder unit that was cheap to produce. However, design details such as vertical valves, an engine block and cylinder head cover of grey-cast iron and a crankshaft with triple bearings were too reminiscent of the Opel 1.8-litre engine with a modest 32 bhp launched just a few months earlier.

The route to the right engine

By now it was the summer of 1932, and General Manager Popp wasn't happy with either of the designs. He sought the opinion of his test director in Munich, Rudolf Schleicher. Max Friz's design was naturally far too expensive and Duckstein's engine, despite its lower manufacturing costs, was on the simple side – not exactly BMW-worthy. However, Schleicher was impressed with such basic concepts as uniting the crankcase and the cylinder block into a highly rigid grey-cast iron component.

A design by Rudolf Schleicher and his colleague Karl Rech accordingly envisaged just such an engine block based on "the American design principle", though even more rigid and featuring four crankshaft bearings. The valves, as in the BMW 3/20 PS, were naturally in overhead arrangement in the grey-cast iron cylinder head, and the air/fuel mixture preparation – unusually for a touring engine – was handled by twin Solex carburettors using the updraft principle.

Fundamental principles of the building-block system – in this case, the possibility of using shared components and machine tools from the existing 3/20 PS four-cylinder – were applied, along with modern assembly methods using pre-assembled units, such as the crankshaft with its six connecting rods and pistons.

Hans Nibel, head of development at Daimler-Benz and a good friend of BMW's managing director Popp, was ultimately consulted as an impartial expert and invited to make the final decision. He unhesitatingly opted for the design by Rech and Schleicher, and with the help of this "midwifery" it subsequently went into series production as the precursor of all future six-cylinder car engines made by BMW.

The chassis design for the car was completely new, and by virtue of its lightweight construction would point the way ahead for subsequent BMW models. Chief constructor Fritz Fiedler, who had joined BMW from Horch as recently as 1932, found a new chassis frame at BMW which had been developed in Eisenach but, with its complex design based on U-sections, did not meet his expectations in terms of the "lightweight construction principle". Using only the basic design of this frame, he succeeded within a short space of time in developing out of it a chassis frame for BMW's first six-cylinder model.

It consisted of two A-shaped tubular side members with a circular section that converged towards the width of the engine and two box-shaped crossbeams in similarly hollow design, with the tubular side members producing a moment of resistance 10 times higher. At the front end of the frame, the side members were taken through a further crossbeam which also

Historical BMW advertisements

served as a bracket for the front transverse leaf spring.

The sections of the side members, moreover, tapered towards the rear since lower bending moments came into play here. Such a lightweight, low-slung frame, boasting exceptional torsional rigidity into the bargain, naturally offered considerable advantages compared with the heavy U-profile frame in common use at the time, and BMW Munich filed for a patent on this design on 28th January 1933. Particular attention was also devoted to the wheel suspensions in the design of this new car following open criticism of this crucial aspect in connection with the previous 3/20 PS and 3/15 PS models.

A front end that defines BMW cars to this day: the “kidney grille”.

The first radiator to feature the “BMW kidney grille”, and a raft of technical innovations which inspired numerous future developments.

At the front, a new swing axle with low wishbones and hydraulic dampers ensured precise control and stability of the steered wheels, while the rear featured the tried and tested principle of a rigid axle with quarter-elliptic leaf springs and lever-type shock absorbers. Initial drive tests in 1932 confirmed that the new car bearing the development code 303 and with a weight-output ratio of 27 kg per brake horsepower was not just lively but also boasted positively safe and far from uncomfortable ride characteristics.

The first “BMW kidney grille”

The 30 bhp 1.2-litre engine with twin carburettors – the smallest six-cylinder in Germany at the time – was as powerful as it was flexible and smooth-running. In its bodywork design, too, BMW struck out on new paths, and this model came to define the BMW look for cars of that decade – and beyond to the present in one particular detail.

The body stylists designed a significantly more spacious superstructure for the new car, which claimed an overall increase in length of 70 cm. In its advertisements BMW still described the model 303 as a small car, but they were clearly well on the way to leaving this humble category behind.

The bodywork designers at BMW had lent the radiator cowling on the new model a particularly striking design. The large air intake on the front of the car was divided into two areas clearly separated by a bar and at an angle to one another. They were faintly reminiscent of two adjacent kidneys familiar from schematic illustrations of the inner organs of the human body. No other leading car manufacturer employed such a radiator design at the time, and the “kidney grille” became a distinctive identifying feature of BMW cars, remaining so to this day with very few exceptions.

It was only later that the story evolved of the Bruchsal-based manufacturers of small roadster bodies, Gebrüder Ihle, having developed and “invented” this design for their sports car bodies fitted onto the Dixi and BMW 3/15 PS chassis. Evidence shows, however, that Ihle only began offering bodywork with “kidney grilles” from 1935, having previously used the unitary flat radiators in common use. Ihle had adopted this striking design from BMW rather than the other way around.

The latest BMW models at the 1933 Berlin Motor Show.

Phaeton by special order

In February 1933, BMW was able to present the first examples of the new 303 model at the Berlin Motor Show. The superstructures for the saloon had been built at the Sindelfingen workshops of Daimler-Benz, who had already signed a cooperative deal with BMW for the con-

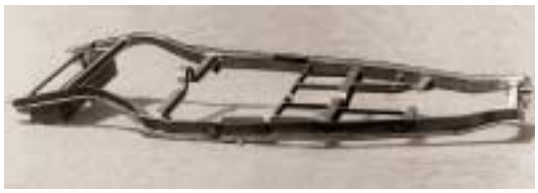
struction of bodies for the previous 3/20 PS model. But this first design was regarded by many as still too angular and "old-fashioned", as a result of which certain modifications were carried out before series production was launched in May. At the same time, further bodywork designs were prepared for a two-seater and four-seater cabriolet.

Eventually these three variants were delivered to the first customers in April/May 1933, starting with chassis number 45001. The saloons with their price tag of 3,600 reichsmarks made up the majority of sales. Anyone wishing to buy the four-window cabriolet or the two-seater sports cabriolet had to pay an extra 800 and 1,000 reichsmarks respectively. Shortly after production launch, there was also the option of a roller roof saloon in which the entire central part of the fabric roof could be rolled back to open up.

Bodywork by Daimler-Benz

The tourer (phaeton) bodywork variant available for the earlier models was only built twice by special commission for the 303, since it was now no longer really in keeping with the times. For the sum of 3,080 reichsmarks, 74 customers ordered a BMW 303 chassis with all the drive units and then had special bodywork built by independent coachbuilders such as Gläser in Dresden, usually in two-seater sports car design.

When it came to the colour scheme of these simply but fully equipped models, the saloon purchaser had a choice of blue, reddish-brown and grey, each with black mudguards. The more expensive sports cabriolet was only available in ivory with light brown mudguards, a silver-grey bonnet and light red or light blue leather upholstery, while the four-seater cabriolet came in black, green, grey and beige with darker-toned mudguards and upholstery and a bonnet to match the basic colour. Clearly great efforts were already being made to offer a wide range of individual choices, and one can easily imagine that road traffic in the 1930s was not dominated by monochrome bodywork.



Top: the first test chassis frame for the BMW 303. Bottom: the new lightweight tubular frame design for the series.

Foundation of success: the 1.2-litre six-cylinder engine with 30 bhp.

The bodies for the saloon and roller roof saloon continued to be supplied by Daimler-Benz in Sindelfingen, and this collaboration would be maintained until the phase-out of the successor models BMW 315 and 319, which were only distinguishable from the 303 in details.

It wasn't until the new 326 and 329 models were launched that the saloon bodies began to be supplied by Ambi-Budd in Berlin once more. In March 1934, the BMW 303 underwent its final revision and was given the same body style, with fundamentally redesigned air intakes on the bonnet, as its successor model BMW 315, which was already waiting in the wings.

Up until the production launch of this 34 bhp, 1.5-litre model, a further 809 BMW 303 units with this body were built over a two-month period. BMW had not only marketed the 303 model as a small car, but in advertising was keen to describe it as a high-performance model. When one considers its lightweight design and its engine, which provided the basic design for the subsequent, typical BMW six-cylinder engines, this assessment would appear by no means an overstatement.

It was with this model that BMW made the leap into the circle of manufacturers of high-quality, sporty, compact automobiles. Anyone who has the good fortune today, 70 years on, of owning and driving a BMW 303 can vouch for the ease and safety with which BMW's first six-cylinder model can be guided even through today's traffic.

The driving seat of the BMW 303.

"A small quality car with powerful performance"

Test report on the 1.2-litre six-cylinder BMW by R. Otte

"We left Berlin in the morning and after four hours we had reached Schierke at the Brocken mountain. That's a distance of 240 km. In normal traffic one can comfortably average 70 km in the new 1.2-litre BMW. This kind of performance will undoubtedly satisfy above-average demands. This small six-cylinder is simply outstanding – smooth, flexible and powerful – a real little luxury machine. And the transmission! The way the gears change, so lightly and gently as if the cogs were made of rubber. The six-cylinder BMW is well above average in the so-called small car category."

From Isetta to Z1 – parts sale and service at BMW Mobile Tradition

Is pushing your car a sign of true love? Are you sufficiently devoted to your historic car not to mind being stranded at the roadside? Having to search for the nearest bus or train can be a turn-off for the most avid aficionado. A reliable supply of spare parts is one of the most important issues for lovers of historic vehicles.

by Sandra Bieberstein

Of course, it's great when you can cruise along country lanes in your classic car enjoying the feeling of driving as it used to be. You don't just need good maintenance to keep the wheels turning. The odd repair is also necessary. And that's where spare parts come in handy.

This is an important topic for drivers and for BMW. More than 60 percent of classic car owners service their own classic vehicles. They also do the occasional repair. This was revealed by the survey "Classics of the Future 2003" carried out by motor magazine Motor Klassik. That's when the mechanically minded enthusiast needs spare parts. They're certainly not easy to find. Car owners generally look to dealers or specialists for spare parts (80.9 percent) and recently the Internet has become an important source (42.4 percent).

Order from ...

Overall, more than 80 percent of owners of classic cars are satisfied with the supply of spare parts. Automobile manufacturers have also played a key role here. In order to keep the history of the company and its vehicles alive and make that history accessible to the community of BMW enthusiasts, the BMW Group founded BMW Group Mobile Tradition in 1994. A specialist team is dedicated to parts supply and particularly to the manufacture of replica parts for historic BMW vehicles.

Generally speaking, parts are supplied there for historic vehicles 15 years after the end of volume production in the case of automobiles and 20 years after production ceases in the case of motorcycles. It doesn't matter whether you're looking for a sealing ring, a wing,

door, windscreen wiper, gear lever, saddle cover, cable harness or speedo – you can get virtually anything. If an owner of a historic BMW vehicle needs a spare part, they should seek advice from their dealer in the first instance. Dealers have access to a large online parts catalogue managed by BMW Group Mobile Tradition. The appropriate part can then be found quickly and ordered. The spare part arrives within the space of a few days and it can then be installed in the vehicle. You can then get back on the road.

But what happens when the purchase order is sent off and there are no more parts in stock? That's when the team at parts supply and replica manufacture come into their own – although they've often taken action much sooner. They sit down together with mechanics, experts from purchasing and materials management specialists, and come up with a solution to the problem.

The search for information on spare parts

The first step is to get all the necessary information about the production method in order to manufacture the missing part. The search includes drawings, any samples available and technical specifications. It's essential to find out what material the relevant part was made of and the various processes that were carried out on it. One of the most important resources in this search is BMW's Technical Archive. This includes drawings and documents with technical specifications.

Once all the information has been collected, a supplier has to be found. Manufacturing a part like this on the basis of the documents is sometimes extremely straightforward, but it can be very tricky. An order for manufacturing a part presents a considerable challenge to the supplier because it is necessary to meet the quality requirements of BMW – and today some production methods are completely obsolete. But that's not the end of the story. The supplier also has to be prepared to produce a relatively low batch volume and costs should not be excessive.

Manufacture and pricing

Unfortunately, the tools for manufacturing the original parts have often been scrapped long since and they then have to be remade by a toolmaker. If all the tools are available, an initial sample needs to be produced. This sample is tested and modified until it meets the quality standard of BMW. Only then is it possible to commence actual production. Here there is also an ongoing process of quality control and sampling.

After all, any customer has the right to receive perfect goods in return for their money. Sufficient parts are then produced to ensure supply for the long term. This might involve continuous production of replica parts over a number of years or one-off production to create a "Stock for Eternity". In order to estimate how many parts are necessary, research is carried out on the market

BMW 02 Series: front trim grille is a typical spare part

Procedure for manufacture of a replica part

A complex and often tedious process takes place before a new "old" spare part becomes available. This is shown here with reference to manufacturing a replica front trim grille in the 02 Series.

Inspecting and procuring technical documentation at BMW.

Technical consultation with suppliers.

Writing a milling program for tool production.

Laser machining after the first pressing.

The part is pressed out.

The part is produced from a number of individual components.

The part ist tested by the inspection machine.

Quality control and acceptance of the initial sample by BMW.

Fitting a sample in the workshop at BMW Group Mobile Tradition.

Front trim grilles are taken into stock at BMW spare parts store.

and any possible competitors in an attempt to estimate the demand for this particular spare part so that replica parts "never" have to be manufactured again.

The comparatively high production costs – costs for tools, manufacture, storage and sales define the pricing structure – mean that price increases for replica parts often cannot be avoided. However, the aim is always to match the price of comparable or similar parts. BMW regards this as part of the service provided by an automobile manufacturer who is particularly concerned to meet the needs of aficionados driving classic vehicles.

Once the replica of the spare part has been manufactured in the quantity ordered or calculated, further quality control measures are undertaken and the entire production batch is then taken into stock.

There is an average lead time of six months from ordering the part, through replica production to placing the part in stock. However, sometimes it takes even longer to manufacture a replica part. This is generally due to the difficulty of finding suppliers who have the appropriate production methods available, meet the quality requirements and are also prepared to produce a low batch volume of this nature. Materials and machining spare parts may also be problematic. Processing methods are often no longer used – in the worst case scenario, the material no longer exists. The only option then is to look for production methods that meet the same or higher standards. When the production process presents particular technical difficulties, it is generally necessary to produce a large number of initial samples before quality meets the high requirements necessary.

Spare parts catalogue and replica parts list

BMW Mobile Tradition publishes all the available parts in an online parts catalogue which is updated on an ongoing basis. The same applies to replica parts. BMW dealers are now able to order the replica part again. A monthly list of replica parts is also published. Moreover, automobile and club magazines receive information about "old" parts that have been manufactured again.

More than 20,000 parts for classic vehicles are kept in stock and almost half of them have been manufactured by BMW Group Mobile Tradition in this way. In the year 2002 alone, around 1,000 different replica parts were produced.

However, problems don't always keep to regular opening times. Classic-car aficionados can undertake research themselves using the parts catalogue on CD-ROM. Enthusiasts will find all the available parts in the historic parts catalogue. There is an exploded view of each part, parts are coded by type and given their designated part number.

Car owners have also been able to access the parts catalogue and the monthly lists of replica-part production online since May 2003. Anyone interested can go to the internet page www.bmw-mobiletradition.com and click on the field "Parts supply", select "Historic parts catalogue" and then register. Registration is simple and free of charge. Access to the catalogue is granted within two working days.

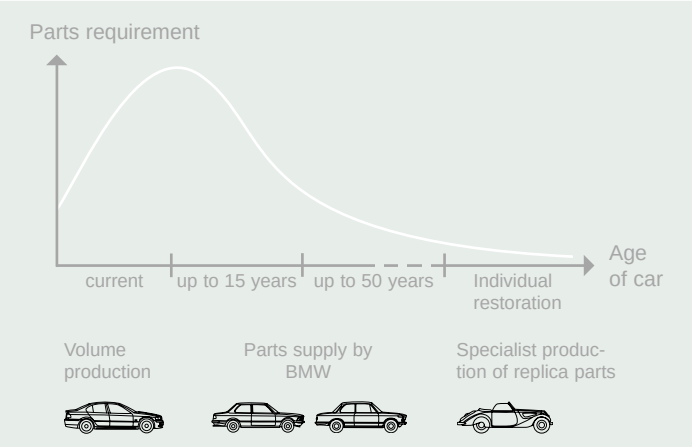
Anyone interested in additional information on this subject is recommended to go to the home page of BMW Group Mobile Tradition. There is a link under "Tradition Aktuell/News" to a talkshow held in German on the stand of BMW Group Mobile Tradition at the Techno Classica 2003 exhibition. Representatives of supply companies discuss the situation and the problems associated with supplying parts for classic cars.

Supplied with all the data

Parts supply organized like this enables the owners of historic BMW vehicles to maintain their "darlings" to an extremely high standard. They can enjoy the feeling of driving as it used to be to the full, with a minimum of unscheduled interruptions.

The historic parts catalogue can be ordered as a CD-ROM from any BMW dealer. The "Parts Catalogue for Historic Automobiles and Motorcycles 2003" has order number 70 00 0 301 255. This includes all the data for classic BMW automobiles and motorcycles. There is also a printed parts catalogue with part number 01 20 5 590 032 for classic BMW motorcycles. The "Parts Catalogue for Historic Motorcycles 2003" on CD-ROM can be ordered citing part number 72 00 0 154 486.

Supply cycle



“We rate the service provided by BMW Group Mobile Tradition very highly.”

Mobile Tradition live spoke to Horst W. Breukmann, President of the BMW Z1 Club, about the nuts and bolts relating to the key issue of parts supply for collectors of historic vehicles.

Mobile Tradition live: Mr Breuckmann, as President of the BMW Z1 Club with more than 250 members you are not just the owner of this classic car from BMW. In collaboration with Maik Hirschfeld, engineering director of the association, you also represent the interests of the members when it comes to technical issues relating to this vehicle. BMW Group Mobile Tradition has been responsible for supplying parts for the Z1 Roadster since 1997. How important is the procurement of spare parts?

Horst W. Breukmann: Procurement of spare parts is a top priority for the very existence of a classic car and essential for keeping it on the road. A large number of classic car enthusiasts spend a great deal of time and effort in exploring all the possibilities for acquiring a key spare part that they urgently require in order to breathe new life into their stranded classic car.
The slogan of our brand The Ultimate Driving Machine highlights the fact that a BMW Z1 is not an exhibition object, but the mobile expression of a development epoch at BMW. Guaranteed production of replica parts and supply of spare parts is absolutely essential if we are to continue to enjoy this Ultimate Driving Machine in the years and decades to come. It’s vital for us to address spare parts supply for the future at a very early stage.

How do you rate the service provided by BMW Group Mobile Tradition in maintaining parts supply for the Z1 over the long term?

We are in the fortunate situation that long before the deadline for guaranteeing supply of spare parts expired, BMW AG decided in conjunction with our club to keep the classic Z1 Roadster on our roads for as long as possible.
Undoubtedly it’s an innovation that already six years after production of our Z1 came to an end, spare parts supply was started up in the classic section of BMW. This underlines very clearly that the car has succeeded in becoming established in the family of BMW classic cars – no mean feat given the relative youth of this car.
This service provided by BMW AG reassures all drivers of the Z1 that they don’t have to lay in a stock of parts as a reserve, which is often not terribly effective in the case of many parts. As long as there is commitment to supplying spare parts that are in demand over the long term – sometimes possibly within a reasonable timeframe – we rate the service provided by BMW Group Mobile Tradition very highly and trust that the current system will remain in place for many years to come.

To what extent do you use other options for obtaining spare parts, for example as used parts?

The number of models manufactured amounts to just 8,000 and the fact that the Z1 has been moving towards classic status for a number of years now means that this car is generally extremely well looked after. The option of cannibalizing a Z1 hardly ever arises, not even with a firm specializing in culling parts from old cars. That means that this source of parts is simply not available.
If the part you happen to be looking for is one of the standard E30 parts built into the Z1 (for example in the engine), it’s definitely possible to make use of this option. But even if you’re dealing with what are supposed to be standard parts, you sometimes still need the instinct of a mechanic in order to make minor adjustments.
Otherwise, there are virtually no other options for getting hold of the majority of parts specific to the Z1, such as the window-lift mechanism, headlamps, the outer panels with their thermo plastic elements, the seat elements and similar items through any sources other than those referred to.
Incidentally, one objective of our club is to maintain the Z1 Roadster as closely as possible to its original status on the road to becoming a classic. This inevitably means that original manufacturer’s parts should always be used.

How satisfied are you with the service you receive when ordering spare parts? Are there any suggestions for improvement that you would like to make?

Basically, we’re very satisfied with this service. But as in all other areas of life, there’s always room for improvement. We’re in close contact with those responsible at BMW Group Mobile Tradition in order to solve any problems that crop up. We are extremely gratified that they are always ready to discuss any concerns and problems we may have.
More attention needs to be paid to “quality assurance”. This is particularly important when suppliers of replica parts change, and it is crucial especially in the case of thermoplastic panelling or other sensitive elements. The importance of this aspect should not be underestimated.
At this point, I should like to mention that the possibility of accessing the current status of replica parts production on the home page of BMW Group Mobile Tradition is a very welcome and indeed exemplary service for the Z1 and for other cars.

We should like to thank you for your interview and wish you and all the other members of the BMW Z1 Club a good journey in the future.

Paul Rosche: engine guru and down-to-earth Bavarian

20 years ago BMW won the Formula One World Championship with Brabham and Nelson Piquet and a BMW turbocharged engine. The engine was designed by Paul Rosche. He is one of the icons of motorsport, even though he has never projected a big profile as a person.

When Bernie Ecclestone was asked about Paul Rosche, he once said: "Paul Rosche? He's a great bloke. Like me, he's one of the old guard. And I mean that both in terms of his character and his abilities as a designer. There's a simple formula for both: you can rely on him." The world of motorsport calls him "Camshaft Paul" and the stories about him are legion. Colleagues, friends and acquaintances are full of admiration for the Bavarian engine designer, whose legacy has lasted way beyond his retirement. We want to tell you a bit about him.

Paul Rosche of BMW Motorsport talking to Niki Lauda (McLaren).

Quotes

"Not only did Rosche have brilliant ideas, you could also have a glass of beer with him."
Niki Lauda

"His great achievement is his vision, which he brings to fruition with his own inimitable discipline. His most outstanding feature is that he never gives up unless there's a good reason."
Karl-Heinz Kalbfell

"We go down on bended knees to have the privilege of driving one of his engines."
Keke Rosberg

"One of Paul Rosche's greatest strengths was improvisation. He had the unique talent of being able to set things in motion that appeared hopeless."
Dieter Quester

"Quite simply, he's a full-blooded engineer who possesses universal knowledge. There's also something else that sets him apart: he always says 'We'."
Joachim Winkelhock

"For me, Einstein was a genius. I can't be a genius because there's no photograph of me sticking my tongue out."
Paul Rosche

From Kaiserstrasse to BMW

Paul Rosche was born on 1st April 1934 in Munich's Kaiserstrasse. That makes him a genuine Bavarian. Paul started school in 1940, right in the midst of the Second World War. Later his parents sent him to a Jesuit school.

When he finished at university, his mother insisted that he should start at BMW. "Look here, son, if BMW takes you, you'll have a steady job for life," was her opinion. And so when Paul Rosche graduated from the polytechnic on 1st November 1957, he started work at BMW. At that time, there were all of six people working in engine design at BMW.

Those six people did everything – the engine block, pistons, timing chain, oil pump, camshaft and valve springs. And they did it well. But it was virtually impossible to get to bed before two o'clock at night in those early days. There simply weren't enough trained people.

Alexander Freiherr von Falkenhausen, boss and friend of Paul Rosche, discovered very quickly what a talented engineer he had among the people under his wing. Paul developed the first camshaft for his boss. Even if, as he always emphasized, "he didn't have a clue about the geometrical form of an operational cam".

The first engines that Paul Rosche cut his teeth on were the V8 engines in the 502/507 Series. The first "real" challenges came in 1963: the legendary four-cylinder designated as Type 115. This was used not only in the BMW 1500, but shortly afterwards also generated 130 bhp as the 118 (fitted with twin Solex carburettors) in the 1800 tisa. This sounded the starting pistol for a BMW success story in motorsport that continues up until the present day.

At the end of 1968, Alexander von Falkenhausen decreed that a turbocharger should be used. He hoped that this would enable BMW to beat Porsche in the European Touring Championship.

The "unloved" turbocharger

At this time, no one really knew what they were letting themselves in for. There was virtually no information available then on exhaust turbochargers. The turbocharger had its debut at Snetterton in England and it was a disaster: the BMW 2002 Turbo could be identified for miles around the racing circuit by a big cloud of black smoke.

It was clear that things couldn't stay like that. Paul Rosche and his team there-

BMW leaves Formula Two: the black armbands were a silent protest by the BMW racing team in Neubiberg, 1970.

Paul Rosche having a serious discussion with Hans-Joachim Stuck. For him, this is all about the Formula 2 World Championship.

fore developed the supercharged engine until it was ready for volume production (BMW 2002 Turbo, 1972) – and as an engine that won races. Although he had never really liked turbocharged engines – he preferred four-cylinder aspirated engines – the BMW Turbo made his reputation as one of the world's great engine designers

Formula One – to be or not to be?

Even when the turbocharger was on the test stand, Paul Rosche was wondering whether this didn't offer potential for Formula One. The neat thing about it was that there seemed to be infinite potential for power.

The idea that you could get into Formula One with a 1.5-litre four-cylinder straight engine (the cast-iron engine block came from volume production) was finally rejected by the BMW Board of Management after a lot of debating. But despite the thumbs down, Paul Rosche and his team continued.

There was a sound tradition of disobeying orders like that at BMW when it came to motorsport construction. At the start of the 1970s, Rosche had successfully continued to work on racing engines in secret after the BMW Board of Management had announced they were quitting Formula 2.

At that time, Paul Rosche and a group of like-minded colleagues, including Formula 2 star Dieter Quester, rented a dark garage in Hufelandstrasse. They put the racing car together outside regular working hours..

And that's how six F2 European Championship titles came to Munich in the 1970s and more than 550 BMW Formula One engines were sold to interested teams. This success came with the blessing of a BMW Board of Management that was now sympathetic, and proud of the achievement. At the same

Alexander von Falkenhausen talking to Dieter Basche, at that time racing director at BMW. On the right, Paul Rosche and Dieter Quester.

time, BMW Motorsport GmbH was founded. Paul Rosche was the hero of the moment.

Back to the turbocharged engine. The 1.4-litre turbocharged engine was based on the 4-cylinder volume-pro duction engine internally designated M12. This engine raced very success fully in the 3 Series BMW Tourer, finally packing a powerful 570 bhp, and Paul Rosche reckoned the time was ripe to get into Formula One. But the BMW Board of Management refused to sanction this after a lot of toing and froing, although BMW racing director Jochen Neerpasch had already established a very promising base with Niki Lauda as driver and McLaren as a team.

Moreover, the F1 engine M12/13 was virtually ready and to cap it all this was to be sold to France, with all rights, to Talbot which was still in existence as a manufacturer back then.

In concert with new racing director Dieter Stappert, Paul Rosche finally persuaded the Board of Management to think things through again.

Nelson Piquet never lost patience and always provided motivation for the BMW turbocharger project.

After F1 is before F1

The result was that BMW became Formula One World Champion with Brabham and Nelson Piquet in 1983. But there was more to it than that: they went down in the annals of Formula One as the first "Turbocharged World Champions". Formula 1 for BMW and Rosche was then brought to an interim conclusion three years later in 1986, when BMW officially withdrew from Formula 1.

From then on, Paul Rosche was head of Department E90, and he and his team developed racing engines for tourers that enjoyed success the world over, high-performance engines for BMW M vehicles and the twelve-cylinder "S70/3-GTR" for McLaren-F1. This was the exclusive super sports car for the road, which was destined to win the first overall victory for BMW with a private team at Le Mans in June 1995. The world of motorsport was not just impressed with the fantastic 633 bhp and the even more fantastic 727 newton metres of torque. The incomparable resilience of this engine was truly remarkable.

It allowed the teams to drive for a full racing season with a single engine, including the Le Mans 24-hour race. This twelve-cylinder was modified further (BMW V 12 LMR) and in 1999 BMW landed the "victory of the millennium" against the strongest field that had ever competed in the Le Mans 24-hour race.

Drivers Winkelhock, Dalmas and Martini drove the record distance of 4,967.99 km at a record average speed of 207 km/h. Department E90 also developed the basis of the 3-litre V10 engine with which BMW celebrated a successful comeback to Formula One in 2000. When the BMW Board of Management decided on 11th March 1997 to develop an engine to go back into Formula One, Paul Rosche was given the brief to establish the logistics, infrastructure and personnel that such a venture required.

A race engine department was set up on the old site of the BMW marine engine facility in the north of Munich, with around 200 jobs for highly qualified specialists. The Formula One engine was developed "alongside" and the idea of the M Roadster took shape in parallel. The third project involved the M 3 being fitted with the 3-litre six-cylinder, internationally acclaimed as a "miracle engine" with more than 100 bhp per litre and a dream torque.

A world first for electronic, variable camshaft control timing delivered exploding performance data and standard consumption of less than ten litres for 100 kilometres.

Rosche continues as a consultant

When BMW finally restarted activities in Formula One, Paul Rosche was already well on the way to retiring officially. But everything that Paul Rosche had achieved in his life had been achieved with his team. They were real buddies who would go to the ends of the earth for him, and he could rely on them all his life.

Today, he still has a well-equipped office in Munich's Hanauer Strasse, where he continues to dream up engines as a consultant for BMW.

"Paul Rosche. A brilliant engine designer"

Anyone who wants to know more about how the M1 nearly took Paul Rosche to his grave or how telemetry was invented needs to read the book entitled "Paul Rosche. Ein genialer Motorenkonstrukteur" by Karl-Heinz Hufstadt (currently available in German). A wealth of pictures and contributions by Bernie Ecclestone, Niki Lauda, Norbert Haug and other big names in racing make this book an informative portrait of the famous Bavarian engine designer.

Available from July 2003 onwards through your BMW dealer:
VGS Verlagsgesellschaft mbH, PO box 101251, D-50 452 Cologne,
Tel.: +49 (0) 2 21 2 08 11 31

From the BMW 3/15 PS in 1931 to the new 6 series Coupé – the fascination of the BMW Coupé in a book.

The resounding success of the book entitled "BMW Coupés, A Tradition of Elegance" is now followed by an expanded new edition.

The epitome of a perfectly styled coupé: BMW 327/28.

Alongside the series of books BMW Dimensions and BMW Portraits, BMW Group Mobile Tradition has also been publishing books on the history of mobility since 1996, in the form of BMW Profiles.

The fifth volume in this series was published in 1999: BMW Coupés, A Tradition of Elegance. The volume was written by Walter Zeichner, responsible for automobile history in the Historic Archives of BMW Group Mobile Tradition. This book focuses on one of the most sophisticated challenges in automotive design: the coupé.

The book is in German and English and a new, considerably expanded edition is being published in September 2003. Apart from numerous new pictures, the content has been comprehensively updated and revised to present all the BMW Series Coupés that have been launched in recent years.

The term coupé originally referred to a light, enclosed carriage in which two people sat facing in the direction of motion. This designation was already being used to describe a two-seater, enclosed motor vehicle in the second decade of the 20th century.

Since the 1930s, the term "coupé" has been synonymous with elegant, sporty automobiles. During that period, BMW created the 327 model, a coupé that aficionados described as one of the most beautiful automobiles in Germany during the 1930s.

The book BMW Coupés, A Tradition of Elegance charts the path of all BMW coupés, starting with the BMW 3/15 ps DA 4 Coupé from the 1930s, through the BMW 327 to the BMW 503 designed by Graf Goertz. The 700 Coupé from the 1960s also had a big following among a wide range of buyers, as did the coupés from the New Class during the 1970s, the first 6 Series BMW during the 1980s and then the BMW 850i and the BMW 3 Series Coupés during the 1990s.

The last chapter is dedicated to the coupés in the new BMW 6 Series, which will be presented for the first time at the IAA Frankfurt Motor Show in September 2003 – automobiles that bear impressive testimony to the long tradition of the BMW Coupé.

Has this whetted your appetite? If so, you can buy the book from September 2003 from your BMW dealer or order it directly from Heel Verlag in Königswinter.

BMW Profile
"BMW Coupés, A Tradition of Elegance"

Available from September 2003 onwards through your BMW dealer or from: HEEL Verlag GmbH, Gut Pottscheidt, D-53 639 Königswinter, Tel.: +49 (0) 2 22 39 23 00

Design drawings for the BMW 700 Coupé. It played an important role in the BMW story from 1959.

Outbound journey: Homburg/Saar – Tehran, 6,200 km

The journey takes its toll: Hans Winter in Syrian Desert.

To Tehran with 12 bhp

In 1956, 22-year-old agricultural student Hans Winter and his Persian friend Koorosh Eghbal decide to visit the latter's family in Meshed, Iran. There's just one little problem: the direct flight from Frankfurt to Tehran costs a hefty 2,013 marks. That is approximately the price of a BMW motorcycle, and Hans Winter happens to be the proud owner of just such a means of transport. So the two companions resolve to tackle the journey with Hans Winter's R 25/2: a formidable challenge for man and machine.

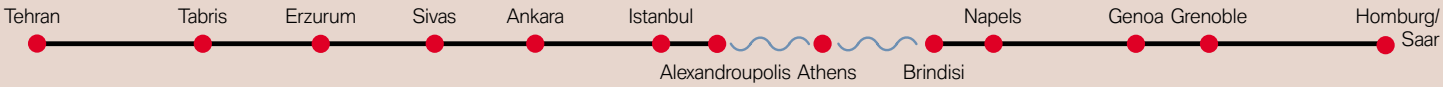
by Fred Jakobs, based on notes by Hans Winter

The 12th of April 1956 is the big day. As the two intrepid travellers set off from Homburg in the Saarland, it is bucketing down. But anyone setting out for Persia isn't going to be deterred by a shower. Indeed, the weather soon begins to steadily improve. By evening they have crossed Germany from west to south-east: 525 kilometres on, they are in Traunstein, Bavaria, where they spend the night in a youth hostel. The next morning they have to replace the Hardy disc. This rubber doughnut on the Cardan shaft is causing a few problems and Hans Winter doesn't want to take any risks. In Austria the R 25/2 faces its first acid test, but the fully loaded bike with just 12 brake horsepower masters the 9 percent gradient of the 21-kilometre Pötschen Pass without any hitches. By evening they have reached Graz in eastern Austria.

On day three they cross the border into Yugoslavia. Temperatures are gradually rising, and they make good progress on the motorway-like road. The locals are astonished at the two bikers, and for the first time on this journey they experience generous hospitality. As the youth hostel is full up, some students organize two beds for them in their hall of residence.

The travellers are also given the address of a friend in Istanbul where they can stay once they get there. Beyond Belgrade, the road conditions steadily worsen. There's also a bit of trouble with the police after Hans Winter photographs a factory complex. They are detained at a police station for three hours before the

Return journey: Tehran – Homburg/Saar, 9,264 km



film is developed and the corpus delicti edited out. This delay and road conditions that sometimes allow speeds of no more than 20 km/h mean that by evening they have clocked up a mere 183 kilometres. But there's consolation in store. The family they stay with feed them well, and the youngsters in the village gather around their western portable radio.

On the way to Skopje the next day, the road is flooded and the single-cylinder engine has a hard time coping with the masses of water. Towards evening they pitch their tent for the first time on this journey. The next day, having crossed Macedonia and reached Greek territory, they also spend the night in their tent. Now there are comfortable roads to savour: "They are flat and smooth as marble," notes Hans Winter – a welcome improvement on the rough conditions in Yugoslavia. They take the coastal road and enjoy the views of the Mediterranean. In the evening they camp with a shepherd, who donates an extra four eggs to their evening meal.

First stage completed: Koorosh Eghbal on the autobahn near Munich.

Bike wash: flooded roads in Yugoslavia.

Improvised rubber component

Day eight takes them back onto difficult roads and they encounter their first problems with the luggage rack, but these are rectifiable. During a brief stop along the coast, Hans Winter and Koorosh Eghbal manage to recharge their batteries, and by evening they have reached Turkey, where they camp near Edirne. The next day they head off in the direction of Istanbul, and it is on this leg that they have their first serious technical problems to contend with.

Hans Winter notes in his diary: "Due to some fairly dusty roads, the rubber buffer of the Cardan shaft has worn down. We first search for the BMW representative in Istanbul, to which some helpful policemen direct us. To our dismay we discover that there's no spare part available and that any imports are banned. In my mind's eye I can see our trip ending right here. We're in the middle of Istanbul and don't know what's going to happen next."

Koorosh Eghbal's diary jottings are more radical: "Two idiots go on a journey to Persia. They make it to Istanbul, but how they are meant to carry on from here nobody knows." As the German consulate cannot help either, the two of them start making plans to continue by train or boat. But chance comes to their rescue: as they are asking their way through to the address they were given in Belgrade, they meet the German manager of Istanbul's Deutz agency at the harbour. After they have described their problem to him, he immediately offers to help out. They accompany him to his repair shop, where he takes a vehicle piston and shapes it into a mould that will later be filled with rubber. This is also an opportunity to do some welding work on the luggage rack and the exhaust. The workers put in extra time, and when the students discover they will not accept any payment for it, it gives them renewed confidence for the continuation of their journey.

The next day the Deutz agent takes them to a rubber factory. The owner of the plant even speaks a little German and, after a brief consultation, he requisitions one of the production machines. By 5 p.m. Hans Winter has a new rubber component in his hand. He asks for a second buffer as a reserve, but the Turk is so convinced of the quality of the part that he gives Hans Winter a verbal guarantee for several tens of thousands of kilometres. The German doesn't want to offend the businessman – who similarly refuses to accept any money for his efforts – and, with a heavy heart, desists from pressing him for a spare. It emerges in due course that the manufacturer was not exaggerating – the rubber disc will survive even the most rigorous conditions over a distance of more than 20,000 kilometres.

Once the two companions have crossed into the Asian part of Turkey, the next bad tidings await them: the border crossing to Persia is closed. They decide to drive through Syria and Iraq, which involves a major detour that will also takes them through the desert. They pitch their tent on the land of a family in

BMW motorcycles for long-distance travel

Whereas globetrotters of the 1950s had to make do with ordinary road models, BMW today has dedicated enduro bikes in its range. The flagship is the R 1150 GS Adventure. A comparison with Hans Winter's R 25/2:

	BMW R 25/2 (1951)	**BMW R 1150 GS Adventure** (2003)
Displacement	247 cc	1,130 cc
Output	12 bhp at 5,800 rpm	62,5 kW (85 bhp) at 6,750 rpm
Transmission	4-speed	6-speed
Tank capacity	12 l	30 l (special option)
Ground clearance	92 mm	200 mm
Kerb weight	142 kg	232 kg
Price	1,990 marks	11,500 euros

Tuzla, where they are plied with milk, cheese and meat stew. As the daughter speaks a little English, some conversation is possible. Although the family urge them to stay on for a few days, the two students say farewell the next day and by nightfall are 50 kilometres outside Ankara. Here, too, they are given food by the local villagers. As it is a public holiday, the consulates in Ankara are closed, so they have to wait an extra day to get their visas for Syria and Iraq. During the night an armed policeman insists on keeping guard over their tent. In order to gain time, the two bikers decide to travel through the night. The radio, which they now use for the first time while on the move, helps pass the long, dark hours.

They reach the coast at dawn, and an extensive swimming break soon helps them forget the rigours of the night. In the afternoon they continue on towards Syria, and then things start to get painful for Hans Winter. He got badly sunburnt in the morning, and the next few days turn into an ordeal for him. In the Syrian city of Aleppo they set up camp for the night. By this time Hans Winter can hardly walk. The lavish meal to which they have been invited is a welcome balm for body and soul. The next day they plan to cross the Syrian Desert, even though they do not have a geographical map, never mind a road map, for this region. The locals try to talk them out of this plan, urging them instead to take a roundabout route via Damascus and Jordan. But they stick to their resolve, not wanting to add another 1,000-kilometre detour to their journey.

It turns out to be the worst day's journey so far. Apart from the heat, they have the sand to contend with, which gets absolutely everywhere. The last 100 kilometres are sheer hell. There's no marked route, and only the telegraph poles serve as a guide. It takes them six hours to cover the distance across gravel, sand and dried-out river beds. They overnight at a customs house on the Iraqi border, 4,630 kilometres from home. The next day, too, the telegraph poles are their only means of orientation as they ride through more gravel and dust. When they come to an oasis on the Euphrates towards evening and fortify themselves with tea, dates, figs, bread and milk, it feels like being on a South Sea island in the middle of the desert.

Sand, gravel and dust: in the Iraqi desert, telegraph poles are the only means of orientation.

The journey then continues on towards Baghdad. Floods force them to avoid the main road, so they hit the desert once more and have to unload the bike several times again and carry it across ditches and through deep mud. When they reach Baghdad at day's end, it is so hot that the tar is sticking to the tyres. They camp in a nearby village and one of the locals sleeps on the roof of the house to keep guard over them. On 29th April they embark on the last stage of their journey to Tehran. They quickly reach the Iraqi-Persian border, and up in the mountains the two friends encounter the first rainfall since they left Germany. Then the roads deteriorate again, and oil tanker lorries thundering past add a further hazard to the journey. When locals tell them Tehran isn't far off, they decide to ride through the night once more.

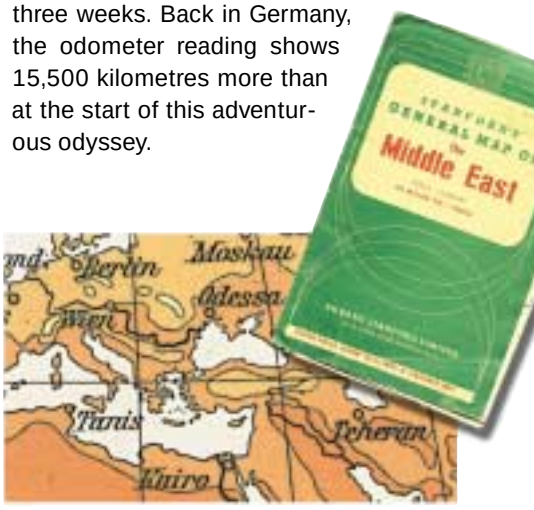
But they have underestimated the distance, and by the next morning the capital is still not in sight. The luggage rack is now falling apart, and a lorry driver offers to take their gear to Tehran for them. The final kilometres take an eternity, with the traffic steadily building up and a strong wind demanding a herculean effort to keep the motorcycle on the road. On 30th April, at almost 10 o'clock at night, they finally get to Tehran. The 6,200 kilometres have left their mark: both are utterly exhausted, and Hans Winter is coming down with a fever.

The trip count: 15,500 kilometres

After spending a few days in the Persian capital, they take the bus to Meshed near the border with Afghanistan. The motorcycle stays in Tehran with the BMW agent, who will give it a thorough servicing. For the two students, their arduous journey is followed by a two-month holiday before they return to Tehran and embark on their homeward trip. Koorosh Eghbal chooses to fly back, while Hans Winter puts his faith firmly in his overhauled BMW again.

His return journey, on which he visits the sights of southern Europe, covers 9,000 kilometres – half as much again as the outbound trip. He manages it in just three weeks. Back in Germany, the odometer reading shows 15,500 kilometres more than at the start of this adventurous odyssey.

Homeward bound through Greece: camping on a deserted beach.



Hans Winter had a map of the Middle East for his return trip.

"My father thought I'd taken leave of my senses."

Professor Koorosh Eghbal and Hans Winter on their Persian journey

Hans Winter

Prof. Dr. Koorosh Eghbal

Mobile Tradition live: When you began planning your journey to Iran, what was the reaction of your family?

Winter: Negative all round. They all thought it was far too dangerous.

Eghbal: My entire family warned me against going on this journey, my father thought I'd taken leave of my senses, and my mother cried the whole time until she knew I had reached Tehran.

Winter: But I have to say that we were very starry-eyed about undertaking such a trip at the time, and our families' scepticism was partly justified.

In what way?

Winter: For example, we didn't have any spare parts with us, not even a spark plug or a spare tyre. And we only had a road map for Europe that stopped just beyond Istanbul. We planned to buy a map of the Middle East in Turkey, because we thought they would have better ones there than in Germany. As it turned out, we couldn't find a single one anywhere in Turkey, which meant we more or less had to rely on the road signs and directions from locals. For the return journey, my father sent a map to Persia for me.

Luckily you didn't have any major breakdowns.

Winter: First of all, I have to say that I had total confidence in my bike. I had stinted myself for years in order to realize my dream of having my very own motorcycle. Every month I would put aside my apprentice's earnings of around 25 to 30 marks, and I saved all the money gifts I got on my birthday and other occasions. My father gave me a mark for each one that I saved. When I had got all the money together and finally went to the BMW dealer to pick up my motorcycle, you can imagine I took the greatest possible care of it. In my tremendous pride – and for all our naïvety about the trip – I simply couldn't imagine the BMW not lasting the course.

Eghbal: This machine was unique, very robust and reliable. You just can't imagine what we put that motorcycle through. There were two of us, after all, and we had a lot of luggage as well – not just our tent, but all the rest of our gear, including a gas cooker and a battery-powered radio-cum-record player. The bike really stood up to an awful lot, especially on the dirt tracks in Turkey, Iraq and Iran.

Coming back to your preparations once more, what did your planning look like?

Eghbal: We didn't really have much of a plan. We just rode when we felt like it and then stopped and rested when we didn't want to go any further, or couldn't go on.

Did you take it in turns to ride the bike?

Eghbal: Not at all. Hans rode the whole distance and I was the pillion passenger. I have every admiration for the way he got through that journey.

What were your most touching experiences?

Eghbal: The friendliness of the people ...

Winter:... and their unstinting helpfulness – what hospitality means to these people. Virtually everywhere we went, we were invited to meals, and often people would also give us petrol as well. If we asked permission to pitch our tent somewhere, we were never turned down. On the contrary, several times we were invited to spend the night inside the house.

What was the greatest challenge during the journey?

Winter: Above all the condition of the roads. In Syria and Iraq especially, we were travelling on terrain without the remotest sign of a marked route. Often we had to carry the motorcycle across ditches – after unloading all our luggage, of course. Once we covered just 100 kilometres in six hours. On top of it all there was the heat, which I just wasn't used to. Then I got myself badly
sunburnt while swimming in the sea off Turkey. It was incredibly painful during the desert stretches we subsequently covered in Syria and Iraq.

Do you have any regrets?

Eghbal: I don't regret anything. It was wonderful.

Winter: If there's anything I regret, it's that we didn't savour the journey enough. Our aim was to get to our destination as quickly as possible, and we didn't take enough time out to enjoy the surroundings or to take part in the daily life of the people along the way.

Almost 50 years have passed since that trip. Did the two of you stay in touch over that period?

Eghbal: Once we got back to Germany, Hans went to Bonn and I began my degree in agricultural science at Giessen in 1957. I also did my doctorate there before returning home to Iran. After the revolution there, I left the country illegally and, until my retirement two years ago, I was professor and coordinator of ecological farming at the University of Hohenheim. It was only when I came back to Germany that we tracked each other down again.

If a young person today was planning a similar journey and asked you for your advice, what would you recommend them or warn them against?

Eghbal: In principle, I would always support such a trip. However, many countries aren't so safe to travel in any more, as recent events in Algeria have shown.

Winter: I would also encourage young people to travel, but I agree that the dangers in our day are different. Modern motorcycles definitely have better running gear and far more powerful engines. Plus you've got better maps, satellite navigation and communications equipment that can help in the event of a breakdown. On the other hand, we experienced real hospitality back then, whereas today you're likely to encounter aggressive begging all the way to extortion or even ambushes. But you gather experiences on such a journey which can have an effect on the rest of your life and which you wouldn't want to have missed.

Talking about the rest of your life, Mr Winter, the trip did indeed have a long-term effect, did it not?

Winter:That's right. There was one family we stayed with in Turkey and with whom I corresponded after the trip. I subsequently visited the family several times and by chance met a woman there on one of the trips. In 1962 I married that woman in Turkey and we went back to live in Germany. We're happily married to this day.

Berge

sind seine Stärke!

Dank seines großen Kraftüberschusses nimmt der BMW selbst schwerste Steigungen spielend und beweist daher gerade bei Bergfahrten so recht seine überragende Leistungsstärke.