

BMW WR 750 – the first supercharged works racing motorcycle from BMW

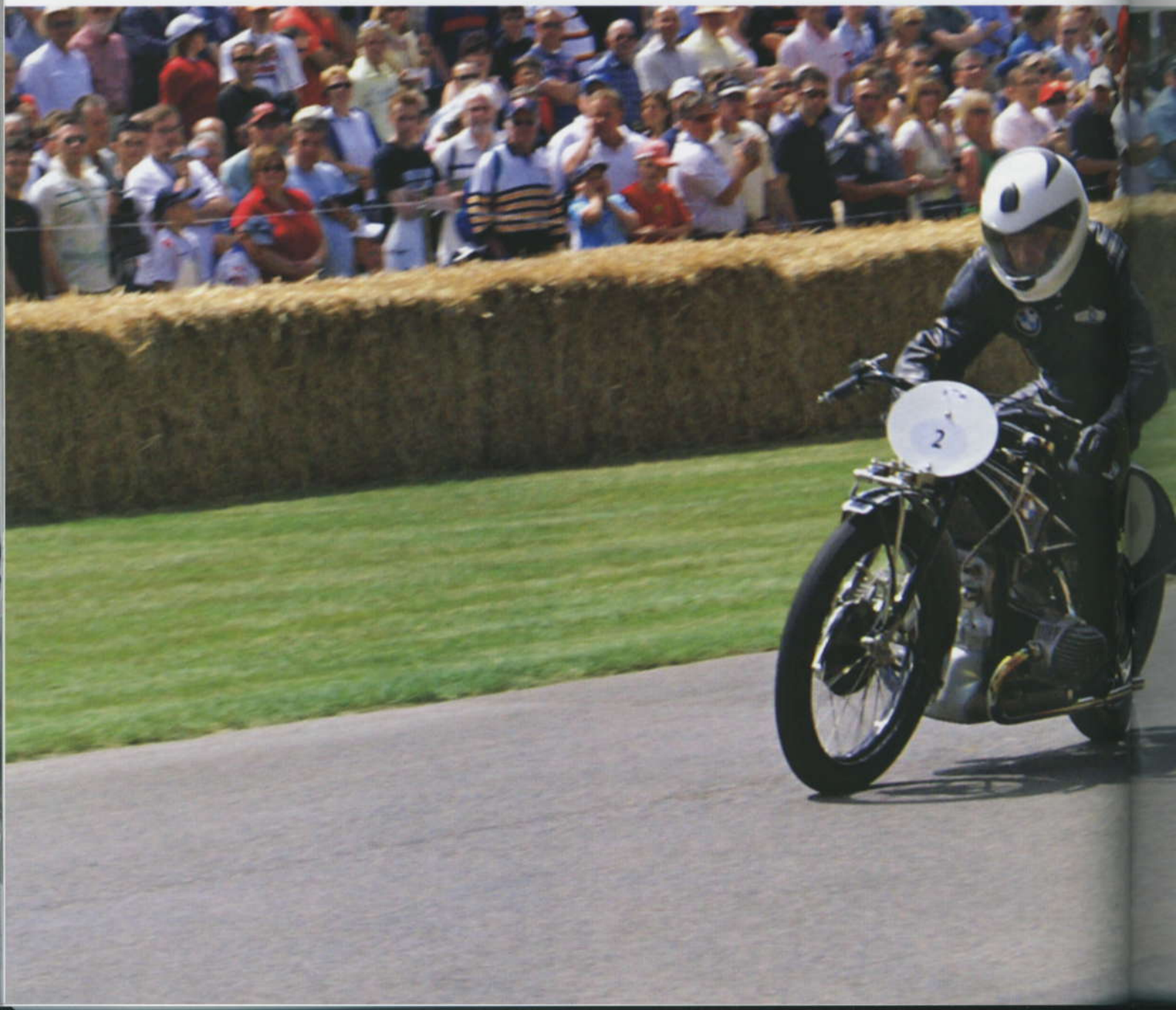
After successful test outings in Italy and at the Nürburgring, a replica BMW WR 750 celebrated its official premiere at this year's Festival of Speed at Goodwood in southern England.

Fred Jakobs

Whenever people talk about BMW compressor motorcycles they generally mean the vertical shaft DOHC works racers that carried the likes of Georg Meier, Karl Gall and Jock West to a string of victories on European circuits from 1935 onwards. But the history of BMW superchargers in competition motorcycles actually goes as far back as the 1920s, although to begin with engineer Rudolf Schleicher was unable to realise his plans to boost engine output using supercharging technology. It is uncertain whether the rea-

sons for this lay in the high financial risk involved or fundamental reservations on the part of chief designer Max Friz. Whichever the case, Schleicher drew the obvious conclusions and in 1927 moved to Zwickau to join automotive manufacturers Horch.

However, Rudolf Schleicher's concept was followed up by two colleagues – the racing mechanic Sepp Hopf, a close friend of Schleicher's, and the works rider and 1926 and 1927 German Champion, Ernst Jakob Henne. Henne, himself a gifted mechanic with his



own BMW motorcycle dealership, had set his sights on the absolute world speed record and believed that the only way he would achieve his goal was with a supercharged engine. So work continued after Schleicher's departure and in 1928 the project also received the approval of Max Friz. WR 500 and WR 750 were the semi-official designations, the two letters standing for "Werks-Rennmaschine" (works racer) and the figures denoting respective engine size.

BMW unveiled the brand new machines ahead of the 1929 season. Each had a modified frame, new front and rear brakes and a supercharged engine at its heart. Expectations for the season were high – after all, this was the most expensive development ever to come out of the motorcycle racing department. But the season was one of ups and downs. Hans Soenius and Josef Stelzer took the German Championship titles in the 500 cc and 750 cc class and made enormous progress in catching the international competition, but the superior British riders always managed to keep their nose in front when it really mattered.

Proof that the team was working along the right lines with supercharger technology came with Ernst Jakob Henne's first world record set in September 1929. His speed of 216.75 km/h beat the

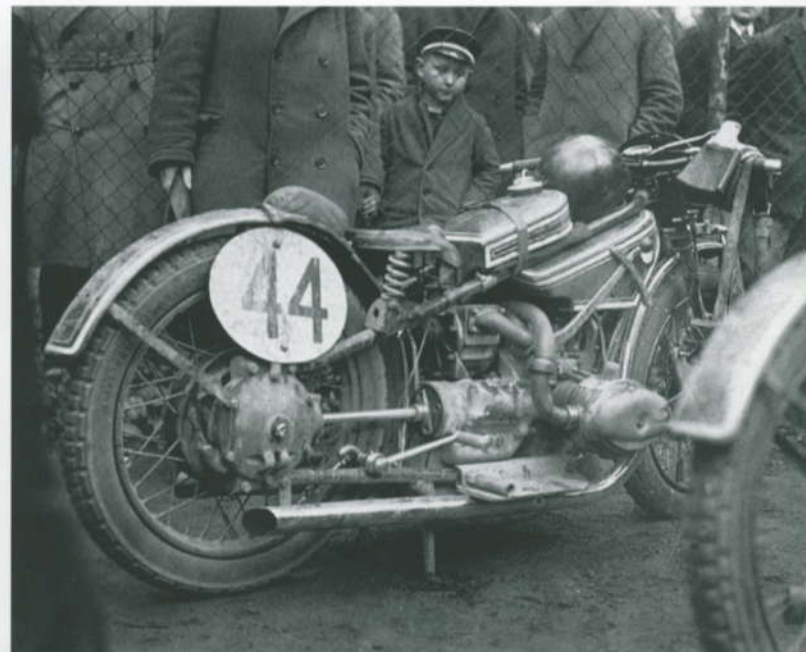
previous best mark set by the Englishman Herbert Le Vack by almost 10 kilometres per hour. The 1930 season also got off to a promising start, with Karl Stegmann notching up two wins at Eilenriede and in the Hungarian Grand Prix. Then fate took a tragic twist. Stegmann, a BMW works rider since 1929, was fatally injured in practice for a hill-climb competition in Czechoslovakia. And when Karl Gall, the second works rider, was involved in two serious crashes in Rome and at the Nürburgring, BMW announced its retirement from official competition.

In 1931 Schleicher moved back to BMW. But as head of the test department he was now also the man responsible for car de-

Main picture | Jürgen Schwarzmann takes the rebuilt BMW WR 750 for a spin around the grounds of Goodwood House at the Festival of Speed.

Below | A focus of attention even for the youngest spectators: the BMW WR 750 as it appeared in 1930.

Bottom | Getting your hands dirty: Karl Gall (left) and his mechanic make final preparations for the 1930 Eilenriede race.



velopment, so further progress on the supercharged competition machines was initially very slow. One key problem was the relative weight of the drive system as a whole. This, combined with an already aging chassis design, meant other more agile models had the competitive edge over BMW. Moreover, as soon as efforts were made to boost output, the engineers immediately came up against the problem of engine reliability. As a result the motorcycles were raced only sporadically during this period, leaving the international race scene largely to BMW's competitors.

Thanks to Henne's world records and growing success in off-road events, BMW was nevertheless able to raise its sporting profile. A key role in this respect was also played by the private drivers, who with backing from the BMW race department – and relying on naturally-aspirated engines – continued to garner race victories and championship titles at national circuit events. BMW was also able to enjoy the sweet scent of victory one last time, when Josef Stelzer took the 1933 German Grand Prix on the Avus track, finishing over three minutes ahead of his nearest rival with a new course record (166.5 km/h). Henne achieved an average speed on the same circuit of 204 km/h during a demonstration ride with his world record-

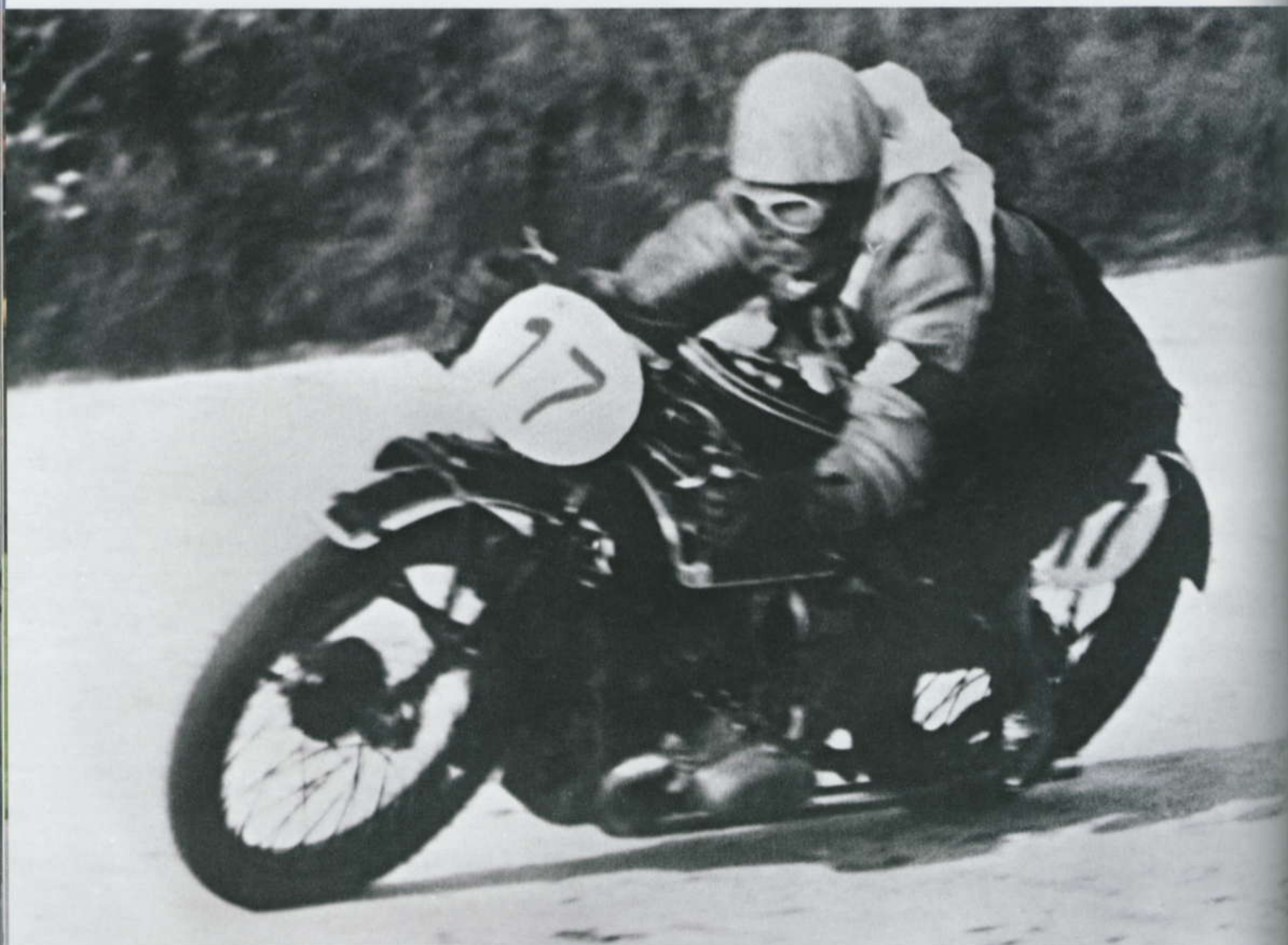
breaking machine, a feat that provided ample proof of the potential of supercharger technology.

But these were to be the two last real outings for this engine, since under Schleicher's guidance, development of a new works racing machine was already well advanced. From now on the WR 500 and WR 750 motorcycles served predominantly as test vehicles for exposing new developments such as the telescopic fork to the rigours of race conditions.

In 1935 BMW could finally unveil its new vertical shaft works racing motorcycle, the 255. Suddenly it was clear why so little effort had been invested in developing the pushrod compressor motorcycles further: Schleicher and his team had taken a radical step and designed a completely new motorcycle. To get there BMW had taken a few years out from international road competition and invested its resources in this new development. But it proved to be a sound decision, for in the years to come BMW would carve its way to the very top of international motorcycle racing.

It is a success story which to a large extent was built on experiences and insights – both positive and negative – gained from the first generation of supercharged motorcycles. ■

Below | Josef Stelzer on the Avus track at the 1933 German Grand Prix, a race he won convincingly riding the WR 750.



"You start with an Isetta and end up with a Rolls-Royce" – Jürgen Schwarzmann on rebuilding the WR 750



Above | Burnouts are not just for today's machines: Jürgen Schwarzmann entertains an enthusiastic crowd with his show at Goodwood.

Mr Schwarzmann, how did the whole WR 750 project come about? I'd been racing BMW models from the 1920s and 30s for a number of years. Then one day I had the idea with a couple of friends, Alfons Zwick and Erich Frey, to rebuild a supercharged engine and fit it to a series chassis – although it wasn't our intention at the time to rebuild a complete motorcycle.

What made you choose this early engine?

Although you still come across examples of vertical shaft assemblies, even ones in working condition, there are no records of any complete – let alone functional – forerunner engines. So although that made the project very challenging it also gave it more appeal.

What particular problems did you come up against?

Virtually all design documentation for the motorcycles has been lost. To begin with we had only a handful of parts. BMW helped us with photos from the archive and allowed us to take measurements from a supercharged unit. We also had the original drawings by Sepp Hopf, who was the mechanic at the time, and were able to talk directly to the motorcycle's designer, Rudolf Schleicher.

Clearly you had your work cut out?

We started searching seriously for parts back in the early 1990s and followed up every lead – even those that took us as far afield as eastern Europe. Gradually we were able to get hold of bits and pieces, but it was when we met an Italian who owned many original parts that we really started to make progress. When we put everything together we almost had a complete machine – and replicas could be made for the rest. In total it took us about 10 years, although there were periods when no progress was made for weeks on end and others when I seemed to be spending all my free time in the workshop.

Did you cut any corners with the rebuild?

No, we managed to reproduce everything authentically so that any original parts we got our hands on later could be fitted to

our motorcycle without any problem. But it wasn't just a case of making things fit – we also remained true to the original in terms of materials and build quality. When you've put so much effort and money into a project like this, you give up worrying about the time factor. You don't think twice about manufacturing a special thread instead of making do with standard bolt sizes. Perfectionism is something that grows on you: you start with an Isetta and end up with a Rolls-Royce.

The burnout you performed for spectators at Goodwood demonstrated how much power the bike has.

Yes, although we actually limited boost pressure to 0.4 bar, roughly half of what was normal for races in the 1930s. Ernst Henne used as much as 2 bar for his record-breaking rides, generating almost 95 hp. But it's not our intention to put our motorcycle under that kind of stress. We want to be riding it for a few more years yet – after all, we're no longer chasing records or German Championship titles. ■

Below | Randy Mamola (right), four-times World Championship runner-up and long-serving ambassador for the BMW Power Cup, talks shop with Jürgen Schwarzmann.

