

## BMW R36

Contributed by BMWVMCA NEWS  
Thursday, 05 April 2012  
Last Updated Friday, 25 January 2013

BMW tells us: "The R36 was a development pattern of a 350cc single cylinder motorcycle using Rudolf Schleicher's patented cylinder head. The significance is, that the intake and exhaust channels in this case enter and exit on the aft part of the cylinder head.

This way, the engine could be built relatively high, the space between the central frame tubes could be utilized for the area between the intake and exhaust ports. (This might seem unclear because the description omits the carburetor and exhaust pipe attached to the ports. ED)

This design concept was known to be in use on an aircraft engine and was first applied in motorcycle engine design by Rudolf Schleicher.

His construction, which he patented 15 July, 1937 was influenced by the design of the BMW 132 radial aircraft engine known as the "Hornet"™.

BMW 132 Hornet Radial Engine as used in the FW 200 Kondor and Junkers 90 Transport Reprinted under the following license: FAVIONUS81

Schleicher presented on 23 January, 1939 a new series of motorcycle which chassis was based on the large tubular framed plunger twin boxers.

The R36 was intended to be a descendant of the R35.

In mid 1939 the project was subsequently shelved. BMW Archives

The Pratt & Whitney "Hornet"™ was the design which BMW built under license as the BMW 132 Hornet, entering production in Germany in 1933 as an improved version of the original P&W Hornet.

Aside from the carburetor aspirated versions of this engine used mostly for civilian and military transport such as the Focke Wulf FW 200 Kondor and the Junkers JU 52 known affectionately among its pilots as "Tante Ju"™, the Luftwaffe used fuel injected 27.7 liter versions that developed 1200HP and more.

Stefan Knittel (BMW Motorrad, Bleicher Verlag 1984 P 61) tells us the following:

During the winter of 1938-39 the prototype machine with new simplified frame work made its debut. The front suspension used a hydraulic damped tubular fork right off the R51-71 design development, and aft the spring supported vertical slider suspension born from the formerly designed twins.

The tubular frame was not welded, but fastened with bolts much like the R23, and dimensionally similar to the R2

In addition were newly designed wheel hubs and brakes, whereby the front brake plate was made of pressed steel

The engine crankcase was similar to the 250cc R23. The transmission was indeed a new four speed development with aft rotating kick starter.

The cylinder head was most unusually undertaken with the principal design of a cylinder head from a radial aircraft engine. This set up left both the carburetor intake and the exhaust port on the aft flange of the head, the two ports on the sides of the head with the valves in the space between them. The spark plug was directly centered in the front of the head.

This design attempt saw no predecessors as examples, in this case inconvenienced by the high aft exhaust.

In contrast to previous designs, this one cylinder engine, newly cradled in hefty rubber mounts to reduce vibration was well applied, however at the cost of severe complications in frame design.

Though evidenced by previous good sales records, with this particular one cylinder the BMW technicians were so fortunate, because this engine could not achieve the performance of the boxer twin. (1)

And so one also found in the passing concept of the new 350cc BMW a new twin cylinder being drawn into

consideration, which henceforth would become the less than satisfactory outcome of the "Hornet Head"™.

With the outbreak of war on 1 September, 1939, the entire project was shelved.

Note: 1. Though Knittel does not say it, his comment suggests the cost to manufacture the R36 was in the same range as the twins it would have competed against, making the R36 at that time financially impractical.

Let us not forget the subsequent post war singles, with four speed transmissions, the last of which had a fully rubber mounted engine and transmission. The Hornet head was not to be seen in any of these bikes.

Whatever became of the prototype R36? ED.

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Study the two photos and drawings carefully. The close up of the left side shows a fully valenced front fender with pin striping very much like the post war plunger frame models. Also note the wear on the pin stripes on the left upper rear of the tank. The bike has been ridden enough to show this wear. Some other cause for removal (or could be black tape) on section of stripes near the fuel tap.

The first photo of the right side of the R36 shows a shallower front fender resembling a scaled down R12 military front fender. Notice that the rear fender edge bead is smooth and even with the shape of the fender, much like the military fenders. ED.

Sincere thanks to the following for their generous help in researching this article:

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Hello Richard,

Please feel free to quote my writings on the R36 development. I have been told the details by no other than the two designers responsible, Rudolf Schleicher - who happened to live in next village to mine, back then - and Alex von Falkenhausen in Munich. Happy times 32 years ago when I researched the story of the BMW motorcycle and with the exception of Max Friz everybody else involved was still around and able to patiently listen to my many questions before coming up with the stories.

Kind Regards,

Stefan Knittel

Dalaas, Austria