



Absolute Beginners

The aeromedical challenges of the **Bachem Ba 349 Natter**

This year marks the 50th anniversary of Neil Armstrong's historic "giant leap" from lunar module to moon surface. The means to get there, however, would not have been possible without the wartime efforts of German designer Erich Bachem, who faced daunting medical as well as technical challenges while developing his vertically-launched interceptor, as **Dr BRETT GOODEN** explains

DURING 1939–41 German scientist Wernher von Braun submitted a design for a vertical-take-off rocket-powered interceptor aircraft to the *Reichsluftfahrtministerium* (RLM — Ministry of Aviation). It was a proposal that must have seemed to much of the RLM hierarchy like something from science-fiction. Not surprisingly, von Braun's proposals were rejected. The official reason given was that such a machine did "not appear . . . to offer any tactical advantage". Nevertheless, the RLM handed the project over to the Gerhard Fieseler Werke GmbH at Kassel in central Germany for further investigation.

Enter Bachem

Head of the Advanced Projects Office at Kassel was Dipl-Ing Erich Bachem, a good friend of von Braun's. Bachem's group set to work on several futuristic studies, including a so-called "horse-and-rider" concept, in which a jet fighter would be launched vertically from the ground by a large rocket booster. Such an arrangement would allow the fighter to reach its operational altitude rapidly and with most of its propellant load intact.

By early 1944 the war situation for Germany had changed dramatically. The Fatherland was being bombed on a regular basis with progressively greater intensity, destroying not only cities but also vital war-industry facilities. The Luftwaffe, hitherto an effective force, was

being steadily overwhelmed. Fighter pilots could not be trained fast enough to keep up with losses. It was becoming increasingly obvious that if there was to be any hope of even blunting this bomber menace, a quantum leap in tactical air capability was required. So, in the late spring of 1944, the RLM called for proposals for a small, inexpensive interceptor which could be produced in large numbers to defend specific strategic targets such as ballbearing plants and synthetic-fuel factories.

By this time Bachem had left Fieseler and established his own aircraft-parts factory in the attractive rural town of Waldsee in southern Württemberg. Bachem realised that with his knowledge of the advanced manned-rocket concept which he and his team had evolved at Fieseler, he was in a perfect position to develop such a weapon. Within a month of initiating the project he had set down in a quick sketch the basic design features of the interceptor which he named *Natter* (Viper or Adder).

The machine would be constructed in three sections. The nose would contain the armament, the mid-fuselage the cockpit and propellant tanks, and the rear fuselage the fuselage-recovery parachute. The rear fuselage would enclose the Walter HWK 109-509 liquid-fuel propulsion unit but the motor itself would be bolted to the rear of the mid-fuselage. This basic design became the foundation for all subsequent developments of the machine.

OPPOSITE PAGE Commissioned by the author for his new definitive book on the *Natter*, this speculative painting by **BARRY SPICER** © 2019 (www.barryspicer.com) depicts a test pilot in pressure suit and helmet preparing to launch in the *Ba 349B-0* (which never flew) from its test site at Heuberg in south-western Germany in 1945.

