Bf 109 G

Thoroughbred fighter viewed from nose
(Denes Bernard collection)

Messerschmitt Bf 109G and K

From good to worse!!

Introduction

When the Messerschmitt design team began work in 1934 on a new fighter for the Luftwaffe it resulted in an aircraft that gained the same fame as the British Spitfire. It was probably Robert Lusser, the "father" of the M-37, alias Bf 108 Taifun who was responsible for most of the basic design work, rather than Walter Rethel as suggested in some sources.
The new fighter type became known as the Bf 109 (where Bf abbreviated the original name Bayerische Flugzeugwerke or Bavarian Aircraft Factory) and its production from 1937 continued until the end of the war, although the last Bf 109 variants had little in common with the first versions. The two versions in production until the end of the war were the Bf 109 G and the much improved final version the Bf 109 K. It was the Bf 109 G that was built in greater numbers than any other 109 variants and the type that was encountered -and feared- by the American day bomber groups.

Fisk 199

Messerschmitt Bf 109 G-1/R1, Werknr. 14008, BD+GC (also known as FiSk 199) was fitted with an auxiliary tail wheel to give more ground clearance during the start with a large size bomb under the fuselage. After the start it came down on a small parachute for re-use. As far as known it was not adopted for operational use. It was fitted with a pressurised cockpit.

Birth of a champion

Willy Messerschmitt was the managing director of the Bayerische Flugzeugwerke A.G.. The company, which was based at Augsburg, built various aircraft types mostly of single-engine design.
In the economic crisis of the thirties, also Messerschmitt's company ran into financial difficulties which in 1931 resulted in bankruptcy. Messerschmitt still owned Messerschmitt Flugzeugbau as a dormant company holding all his technical patents. New working capital was borrowed and on 27 April the Regional Court of Augsburg issued a verdict that gave Messerschmitt the opportunity to re-open his factory gates with 85 employees. He received an order from Romania to build a small series of light passenger aircraft but the German Ministry of Aviation RLM (Reichsluftfahrtministerium) refused permission to build them.
The RLM was of opinion that the new development and production capacity had to be strictly used for Germany.
In compensation Willy Messerschmitt received a contract for the development and construction of a single engine aircraft to compete in a fighter contest between the various aircraft manufacturers. This opportunity would have far-reaching consequences! Although Messerschmitt had no practical experiences in designing fighters, he had a sound basis with the all-metal Messerschmitt Bf 108 4-seat light plane. This was of modern light-alloy monocoque construction with a fully retractable main undercarriage. From the Bf 108 Willy Messerschmitt and Dipl. Ing. Robert Lusser designed a small and sleek single engine fighter, intended to be fitted with a more powerful engine -the Junkers Jumo 210A of 610 hp.
However, as this engine was not available Messerschmitt selected the Rolls Royce Kestrel liquid cooled in-line engine as preliminary power source . The new design received the RLM type designation No.109, preceded by the initials 'Bf' for the Messerschmitt works trade name at that time: 'Bayerische Flugzeugwerke'. During the fighter competition, held in October 1935 at Travemünde, Messerschmitt entered his Bf 109 against the Heinkel He 112, the Focke Wulf FW

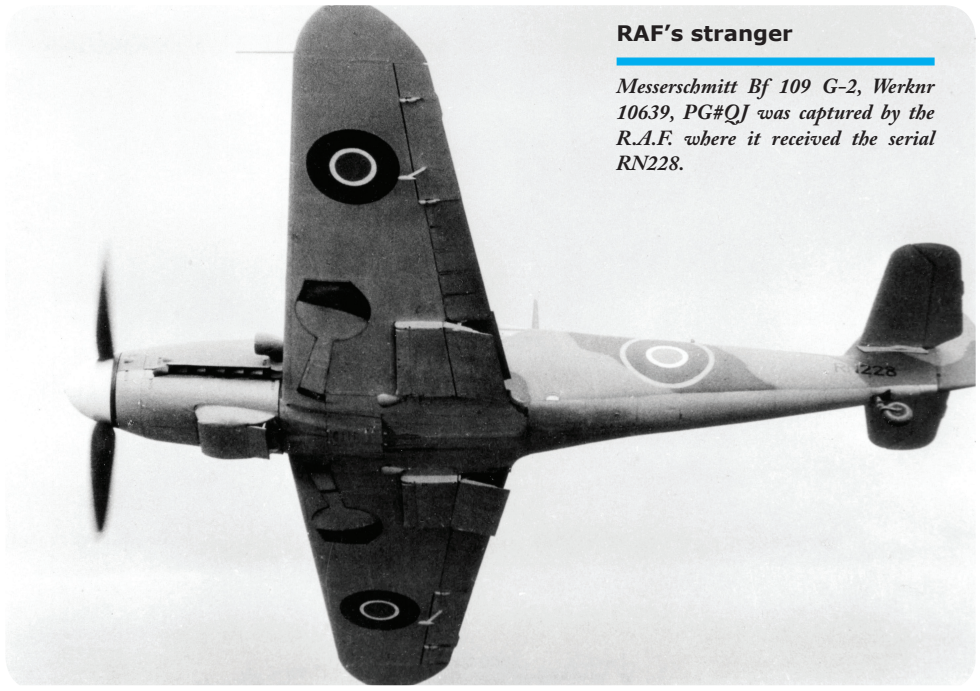
159 and the Arado Ar 80. The FW 159 parasol plane and the Ar-80 with a fixed landing gear were clearly inferior, but Heinkel's He 112 was in all aspects more or less equivalent to the new Messerschmitt fighter. Eventually a development contract for ten prototypes was placed for both Bf 109 and He 112, but it was the Bf 109 that was finally selected for mass production beginning in the spring of 1937.

From Bf 109V1 to Bf 109 G
Honing the breed

Lusser's design for the new single-seat fighter revealed an aircraft with a sleek fuselage combined with tapered wings fitted with automatic leading edge slats. The main wheels were attached to the fuselage and retracted outwards into the wings. The advantage of this construction was that even without its wings the fuselage could rest on its wheels. The horizontal tail was supported, just like the preceding Me-108, with single struts and the tail wheel was not retractable. In the first prototypes the engine drove a two-bladed Härzel propeller. On 28 May 1935 the Rolls Royce Kestrel powered prototype, the Bf 109V1, made its first flight at Augsburg with Flugkapitän (flight captain) Hans 'Bubi' Knoetzsch at the controls. It carried the civil registration D-IABI and it was this machine that was used in the fighter contest at Travemünde in October 1935!
In January 1936 it was followed by the 610 hp Junkers Jumo 210A powered Bf 109 V2 registered D-IUDE. which made its first flight on 12 December 1935. The Bf 109 V1 was unarmed, but D-IUDE had provision for two 7.9 mm synchronised machine guns in the nose above the engine firing through the propeller. A third prototype Bf 109V3, registered D-IOQY, (first flight on 8 April 1936), very similar to the Bf 109 V2, joined the test programme in June 1936. This prototype was in fact the first Bf 109B-0. More prototypes not only joined the testing program, but also participated in the prestigious air races held in the summer of 1937 at Zürich. The Bf 109 V10 and V13 D-ISLY and D-IPKY entered this competition as 'sport planes' with up-rated engines and convincingly won the speed contests! However, by this time the Bf 109 V4 D-IALY was already fully armed with three MG 17 machine guns. The RLM had placed a contract for the delivery of the Bf 109 a year earlier. According to many early sources the first planned production model Bf 109 A was never built but in fact a small series of 24 Bf 109 A's was manufactured during January-February 1937 at the Messerschmitt Regensburg plant. They were allocated Werknrs. (works numbers) 803-810; 878-884 and 1001-1009. Werknr. 884 became the Bf 109V10. The Bf 109B-0 was delivered in small numbers to the Luftwaffe in the spring of 1937. It was the Luftwaffe's first modern single-seat fighter. The B-0 was further developed and the Bf

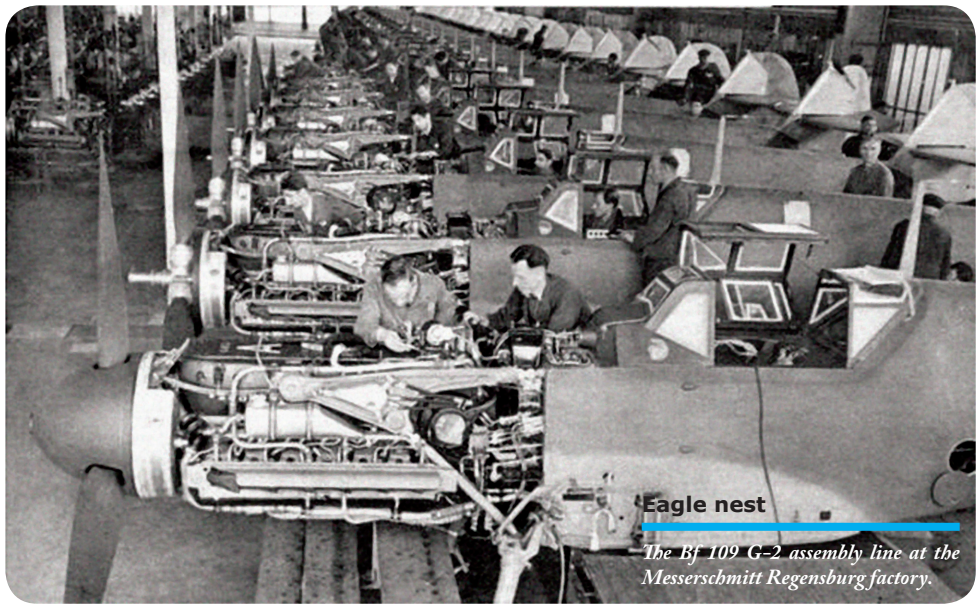
V 31

During its career all Bf 109s were fitted with a small track main undercarriage in spite of many complains from the pilots flying it. This Messerschmitt Bf 109 V31, Werknr 5642, SG#EK was experimentally fitted with a wide track undercarriage, but this was only to test it for the future Me-309 fighter. It was an ex-Bf 109 F-2 that was also used to test the retractable type belly radiator of the Me-309.
(Scott Hochstein collection)



RAF's stranger

Messerschmitt Bf 109 G-2, Werknr 10639, PG#QJ was captured by the R.A.F. where it received the serial RN228.



Eagle nest

The Bf 109 G-2 assembly line at the Messerschmitt Regensburg factory.

Engine run

Messerschmitt Bf 109 G-2 CC#PG during an engine test run with engine covers removed. When this photo was taken, it was a brand new machine.

Check out

A Croatian air force Messerschmitt Bf 109 G-2 showing the Croatian national symbol under the cockpit section. It flew in standard Luftwaffe markings.
(Josip Novak collection)

109 B-2 with a 670 hp Junkers Jumo 210G and a two-blade variable pitch propeller was the first to see action when the German Condor Legion joined Nationalists forces in the Spanish Civil War. It was superior over all other airplane types encountered in combat and a future German ace like Werner Mölders scored in Spain his first kills by shooting down a Republican Polikarpov I-15 Chato. Remarkably this aerial victory was claimed as a 'Curtiss fighter' in the German biography of Mölders (Fritz von Forell, Mölders und seine Männer, Steirische Verlagsanstalt, Graz-Austria; 1941)

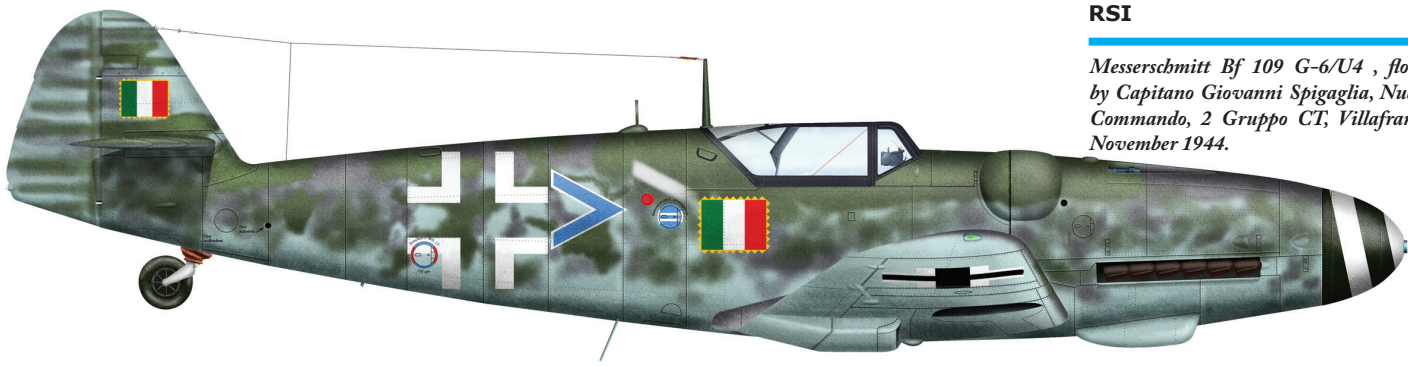
According to recently discovered Messerschmitttt internal documents it appears that there never was a Bf 109 B-2! All machines so identified were in fact Bf 109 B-1s retrofitted with a VDM propeller.

The Condor Legion gained valuable combat experience from its military expedition in Spain that was put to good use later when German forces began their full scale attacks on Poland, the Low Countries and France. By that time the Bf 109 B had already been succeeded by the much improved Bf 109E. This type had been preceded by the lesser known Bf 109 C and D built in smaller numbers. The Bf 109 E, armed with two machine guns and one 20 mm cannon and fitted with a 1100 hp Daimler Benz DB601 engine with fuel injection, was the variant used during the Battle of Britain. Although the Supermarine Spitfire was a more manoeuvrable aircraft the Bf 109 E was found to be a very dangerous opponent for the famous British fighter. After the Battle, the Bf 109E, known as 'Emil' in the Luftwaffe, continued to see service intercepting raiding British warplanes and in the Southern-European and North African war theatres

However, the Emil was quickly succeeded by an improved variant; the Bf 109 F. The F-version featured an improved aerodynamic shape of the front fuselage, a reshaped wing with rounded wingtips and a more powerful Daimler Benz DB601 engine and no longer had the characteristic struts for the horizontal tail. In general the 'F' - 'Friedrich'- was regarded as having the best all-round performance of the 109 variants and it soon replaced the Emil on all fronts. It was this version that made Hans Joachim Marseille famous and he was one of the several German aces who scored kills while flying this type.

The Gustav

The Bf 109 G 'Gustav' was the most important variant of the Bf 109 . It was also built in the largest numbers, in particular during the last years of the war. The Gustav was fitted with the new Daimler Benz DB605 engine giving 1475 hp. With GM-1 (nitrous oxide) injection equipment it could be boosted for a short time to over 2000 hp. In addition water/methanol injection (MW 50) was used to briefly boost performances. The GM-1 and MW 50 systems boosted the en-



RSI

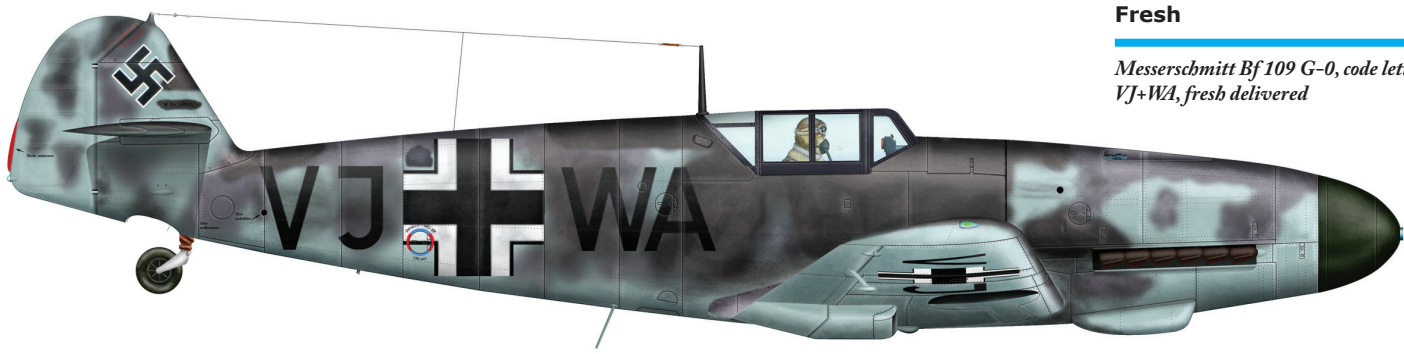
Messerschmitt Bf 109 G-6/U4 , flown by Capitano Giovanni Spigaglia, Nucleo Commando, 2 Gruppo CT, Villafranca, November 1944.

JG 76

Messerschmitt Bf 109 G-14, from III/ JG 76, 1944

Unknown

Messerschmitt Bf 109 G-6/MW, unknown unit



Fresh

Messerschmitt Bf 109 G-0, code letters VJ+WA, fresh delivered

JG 54

Messerschmitt Bf 109 G-1/R2 , 6/JG 54, wear one of the non standard camouflage pattern

The following versions of the G-variant

Bf 109 G-0	**pre-series still fitted with DB601E engine armed with two MG 17 machine guns and one MG151/20 cannon. They were additionally strengthened and had provision for a pressurized cockpit.**
Bf 109 G-1	**fitted with DB605A-1 engine of 1475 hp with GM-1 injector and a pressurized cockpit.**
Bf 109 G-1/Trop	**tropicalised version fitted with a dust filter.**
Bf 109 G-2	**similar to Bf 109G-1 but without pressurised cockpit. Actually, the version without pressurized cockpit was the "light version" Bf 109 G-1/R2. It also had armour protection for the fuel tank removed for better performances.**
Bf 109 G-3	**similar to Bf 109 G-1 but fitted with FuG 16Z board radio instead of standard FuG 7A. Main diffe rences with the Bf 109G-1/2 were the use of thicker main wheels for the undercarriage (669x160 mm wheels against 669x150 mm), hence the appearance too of small bumps over the wings, a bigger tailwheel (350x150 mm against 290x110 mm) and the attachment point of the vertical antenna thread relocated to the seventh section of the fuselage.**
Bf 109 G-4	**similar to G-3 but without pressurised cockpit.**
Bf 109 G-5	**powered by a DB605 engine with MW-50 injection (methanol/water 50/50) to boost performance for a short period to1800 hp. This version introduced the cowling-mounted MG 131 with bulges for the ammunition chutes, the cabin-compressor was located on the right side of the engine, against left side on the previous versions. The Bf 109G- 5/U2 had the GM-1, Bf 109/R2 was a reconnaissance version and Bf 109 G-5/R6 had two underwing MG 151/20 guns. Sixty-seven Bf 109G-5s received a DB 605 AS engine with GM-1 and were called Bf 109G-5/U2/ AS. The G-5 could also be fitted with two underwing Wgr21 21 cm mortar launchers.**
Bf 109 G-6	**the most important Gustav version built in the largest numbers. It could fitted with a DB605AM, AS, or ASM engine. It was armed with two MG 131 machine guns. The Bf 109 G-6/U4 had a single MK 108 30 mm cannon firing through the propeller hub and two MG 151/20 cannons fitted under the wings as Bf 109 G-6/R6. This combination was regarded as the most suitable for daylight bomber interception although it lacked the performances to meet allied escort fighters on even terms. As for the Bf 109 G-5, the G-6 could be fitted with WGr 21 mortar launchers under the wings.**
Bf 109 G-7	**a proposed improved Bf 109G-6 that was never built. Most likely it was later developed further into the Bf 109 G-14 without pressurised cockpit**
Bf 109 G-8	**photo reconnaissance version. It was armed with two MG 131 machine guns and the standard MG 151/20 mm cannon firing through the propeller hub. For reconnaissance missions it could be fitted with two Rb 12.5/7 or Rb 32/7 camera's as Bf 109 G-8/U3.**
Bf 109 G-9	**not built**
Bf 109 G-10	**the fastest of all Bf 109 G versions. It could fly at 7600 m with a speed of 690 km/h powered by a DB605D engine with MW-50 injector. Standard armament was a single MG 151/20 mm cannon and two MG 131 machine guns. The U4 had two additional MK 108 cannons fitted in a streamlined pod under the fuselage that could be replaced by a non droppable fuel tank. Bf 109 G-10/R2 was built by WNF in Austria. It was a reconnaissance version fitted with FuG IFF radio equipment.**
Bf 109 G-11	**not known.**
Bf 109 G-12	**a two-seat training version with tandem cockpits. They were modified from the Bf 109 G-4 and**
G-6	**retaining the standard armament of the respective versions**
Bf 109 G-13	**not built (no trace found in Messerschmitt archives).**
Bf 109 G-14	**fighter-bomber version with a single MG 151/20 cannon and two MG 131 machine guns. It could be fitted with two extra underwing MG 151/20 cannons or two launching tubes for Wgr 21 rocets. It had under the fuselage an ETC 250 bomb rack. As Bf 109 G-14/U4 it had the MK 108 in place of the MG 151.**
Bf 109 G-14AS :	**the most built version of all Bf 109 G-AS built. Engine could be DB 605 ASM (until December 1944, or DB 605 ASB/ASC from January 1945 onwards).**
Bf 109 G-15	**not built.**
Bf 109 G-16	**a heavily armed ground attack version that never left the drawing board.**

gine differently : GM-1 above the rated altitude and the MW 50 below the rated altitude.
Externally the 'Gustav' was similar to the preceding F-model. The most visible differences were the lack of the small triangular cockpit window and the addition of small air openings on each side of the nose. The first batch of three Bf 109 G-0 machines with Werknr. 14001 to 14003 was delivered over 1942 although still fitted with a DB-601 engine since the DB605 was not yet available. Soon more versions followed, designated as Bf 109 G-1 (the first one being Werknr. 14004) to G-16. By early 1943 most Bf 109 F's had been replaced by the G-variant.

Black one

Messerschmitt Bf 109 G-2 'Black 1' flown by the Croatian pilot Franjo Dzal. He was credited with a total number of sixteen aircraft shot down. After the war he was court-martialled and sentenced to death. He was executed in October 1945.
(Josip Novak collection)