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**Messerschmitt
Bf. 110 scale data**



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Messerschmitt Bf 110

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ALTHOUGH proving a humiliating failure during the Battle of Britain, the Messerschmitt Bf 110 was to provide the backbone of the *Luftwaffe's* night fighter force until late in 1944. The aircraft was conceived in 1934 as a long-range bomber destroyer with the ability to meet single-engined fighters on equal terms.

The first prototype, the Bf 110 VI, flew on 12 May 1936 piloted by Rudolf Opitz. It, like the second two prototypes, was powered by two 960 h.p. Daimler Benz DB 600A engines and was almost as fast as the contemporary Hawker Hurricane fighter. The first production model, the Bf 110A-O, was powered by two 610 h.p. Junkers Jumo 210 engines and was followed by the generally similar B-O. Two B-Os were later re-engined with the DB 600A as forerunners of the B-1 fighter & B-3 trainer.

The first major production model was the Bf 110C which featured 1,100 h.p. DB 601A engines with direct fuel injection. Several variations on the basic design were produced including the C-4B and C-7 fighter-bomber and the C-5 reconnaissance fighter. The Bf 110D series were fitted with a variety of long-range fuel tanks and the Bf 110E was a specialised fighter-bomber. Of these perhaps the most potent was the Bf 110E-1/R2 which could carry two 2,200 lb. bombs beneath the fuselage. The Bf 110F series were similar to the E model, but were fitted with 1,300 h.p. DB 601F engines. The F-2 was equipped with two 210 mm. WGr 21 rocket tubes.

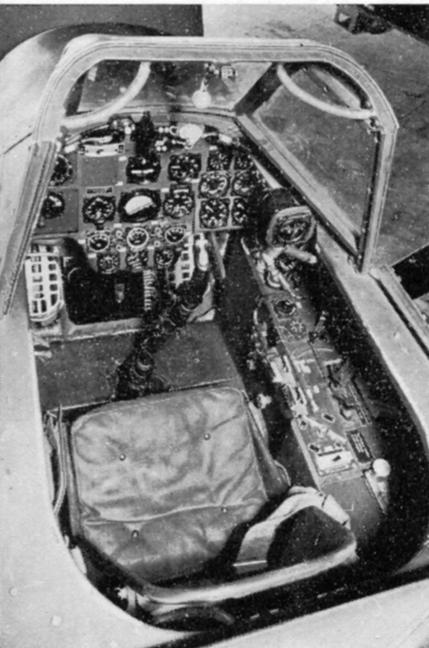
By far the most important production variant of the Bf 110 was the G series which appeared late in 1942. The aircraft differed in being powered by two 1,475 h.p. DB 605B engines and could carry an armament of four 7.9 mm. machine guns and four 20 mm. cannon. The Bf 110G-2 was a fighter-bomber, the G-3 was a high-speed reconnaissance aircraft and the G-4, which was produced in parallel with the F-4, was a night fighter. A multitude of sub-variants were produced from the basic G-4 design featuring such refinements as different radar equipment, GM-1 power boosting equipment, additional armament etc.

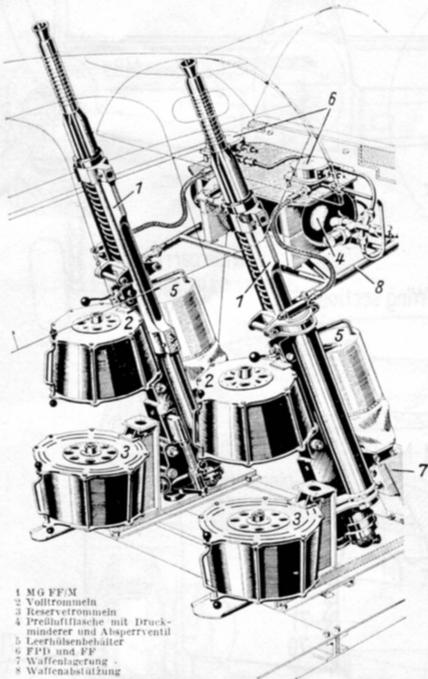
Late in 1938, Goring established the first of the *Zerstorergruppen*; elite fighter units to be equipped with the Bf 110. The aircraft first entered service with I.(Z)/LG 1 and when war was declared in September 1939, the *Luftwaffe* possessed nine *Zerstorergruppen*, although only three of these, I.(Z)/LG 1, I./ZG 1 and I./ZG 76 were equipped with the Bf 110C-1. All three units took part in the Polish campaign, the Bf 110 proving more than a match for the ancient fighters of the opposing air force.

In December 1939, Bf 110s from I./ZG 76 in company with Bf 109s intercepted 22 R.A.F. Wellingtons over the Heligoland Bight with the result that only eight bombers returned intact. Not for another three years did a large Allied bomber formation violate German airspace in daylight. I./ZG 1 and I./ZG 76 took part in the invasion

Below left, the photos and instruments of a Bf 110 C-4 showing the right fuselage side console and a direct reading compass mounted separately at sill level. Note fretted rudder pedals which have stirrups and twin handgrips for access. At right, a view aft shows the observer's seat. In later aircraft, this and another for a gunner were of wicker basket type. These photographs by

'Aeroplane'. Centre top is the same C-4 on test at Farnborough with the canopy opening and nacelle fairing detail evident. Small vertical rod is red, indicates U/C position (I.W.M. photo E. MoS 131). Centre below, is the Bf 110 G now at Biggin Hill, with radar antennae, exhaust mufflers, underwing tanks and different nacelle shape to the earlier types.

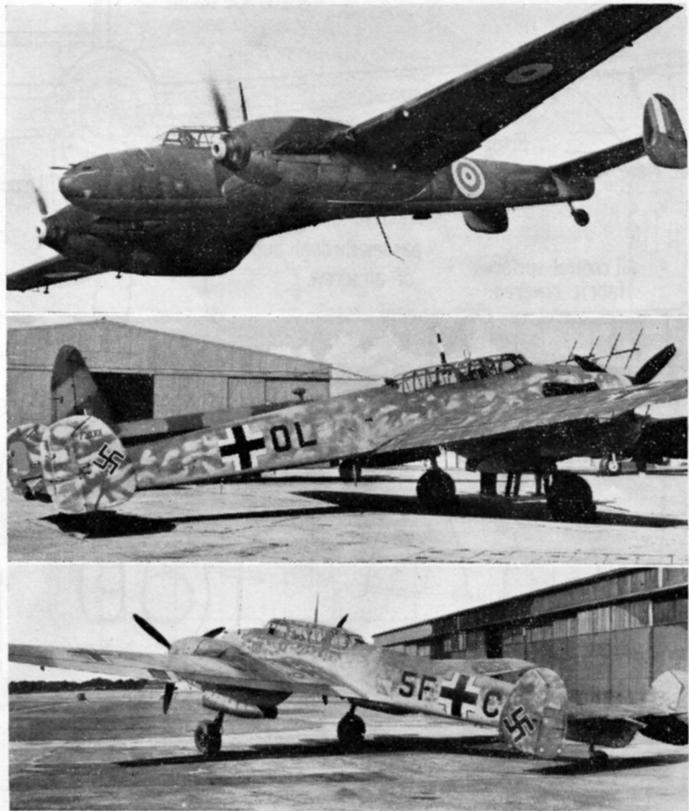




- 1 MG FF/M
- 2 Volltrommel
- 3 Reservetrommel
- 4 Preiluftflasche mit Druckminderer und Absperrventil
- 5 Leertöltbehälter
- 6 FPD und FF
- 7 Waffenlagerung
- 8 Waffenabstützung

Abb. 6: Bf 110 G-4/R 8 Übersicht MG-FF/M Schrägebau

Detail from Official handbook shows Messerschmitt Bf 110 G-4/R fitted with two 20 mm MG FF/M cannon in the co-called Schräge Musik (Jazz Music) installation. Mounting is in the rear cockpit, facing forward.



Top: Bf 110 C-4 on test in R.A.F. insignia (I.W.M. photo E MoS 122)
Centre: Bf 110 G at Biggin Hill, 730301 on fins, repainted colours.
Underneath peeling is off-white. Bottom: Bf 110 C-5 of 4th
Staffel, Gruppe 14 (I.W.M. photo MH 4196).

of Norway and Denmark in April 1940 and nine Bf 110C and D equipped *Zerstörergruppen* were operational for the campaign against France and the Low Countries in May.

The first real test for the Bf 110 came during the summer of 1940 when the aircraft was used as an escort fighter for *Luftwaffe* bombing attacks on the British Isles. Nine *Zerstörergruppen* (drawn from ZG 2, ZG 26, ZG 76 and V.(Z)/LG 1) were operational for the Battle of Britain, plus the experimental fighter-bomber unit, *Erprobungsgruppe* 210. Although very fast, the Bf 110 suffered severely from the attentions of the highly-maneuvrable Spitfires and Hurricanes of the R.A.F. and the ludicrous situation developed whereby the Bf 109E had to protect the Bf 110.

Meanwhile three night fighter *Gruppen* had been established within the *Luftwaffe*, two of them equipped with the Bf 110. By June 1941, when German forces invaded Russia, four night fighter units (I, II and III./NJG 1 and I./NJG 3) two fighter-bomber units (I and II./SKG 210) and three destroyer units (I, II and III./ZG 26) were operational.

Initially the Bf 110 night fighters attacked visually, but this was soon abandoned in favour of the Himmelbett system of ground-controlled interception. In February 1942 the *Lichtenstein BC* radar set was introduced into service. This set was carried by the aircraft itself with a complex radar array distributed around the nose. By February 1943, five night fighter *Geschwader*, NJG 1, 2, 3, 4 and 5 had been established, but in July the R.A.F.'s first use of the 'Window' jamming device rendered all German radar sets virtually useless.

By the autumn of 1943 no less than seven *Zerstörergruppen* were established in Germany as defence against the ever-increasing daylight attacks by U.S.A.A.F. bombers. At first the American bombers suffered heavily, especially from the rocket-firing Bf 110s, but the introduction of long-range escort fighters drastically changed the situation. By July 1944 the remaining *Zerstörergruppen* had been disbanded.

At the end of 1943 several new radar sets were introduced into *Luftwaffe* service, and during early 1944 Bomber Command suffered severe losses. Perhaps the worst was on 30 March when 94 bombers were shot down out of a force of 795 attacking Nuremberg. But, after the invasion of France in June 1944 the night fighter force rapidly declined. By December 1944, 913 night fighters were on strength, but only 150 of these were Bf 110s.

Towards the end of the war, many night fighter units were reduced to nocturnal ground-attack sorties against Allied troops, and many aircraft were lost in this hazardous business. When the war in Europe ended on 8 May 1945, only NJG 1 retained the Bf 110 in any numbers, although the *Luftwaffe's* highest-scoring night fighter pilot, Maj. Heinz Schnauer of NJG 4, was still flying his Bf 110.

Thanks are due to Members of 'Gruppe 66' the International Society of German Aviation Historians, especially members J. R. Smith and K. S. West, the Royal Air Force Biggin Hill, Imperial War Museum and Temple Press Ltd.