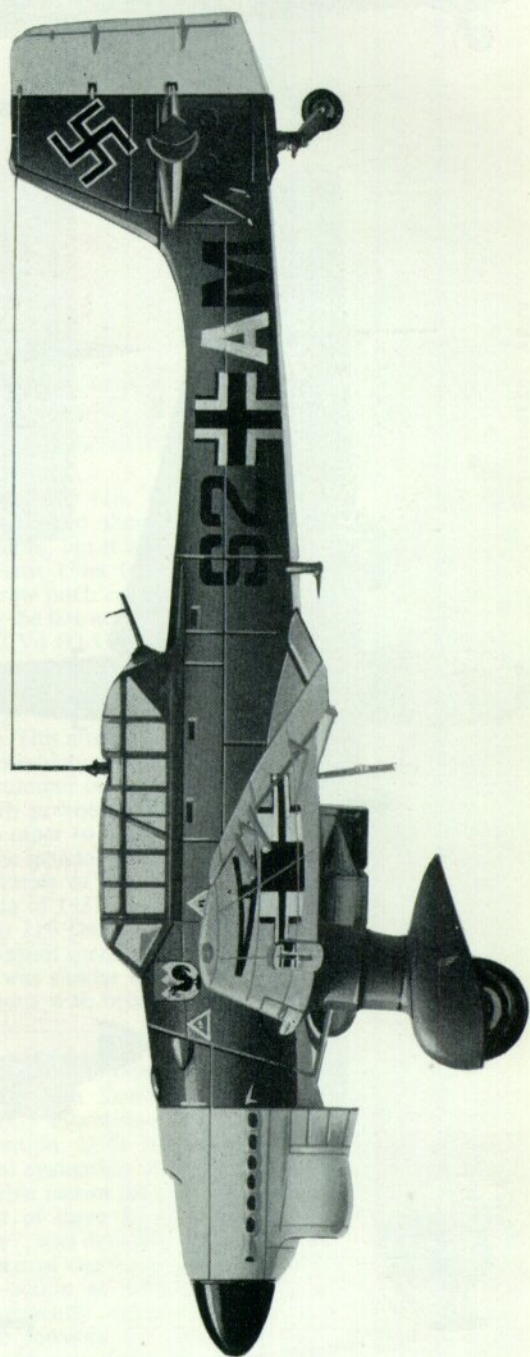
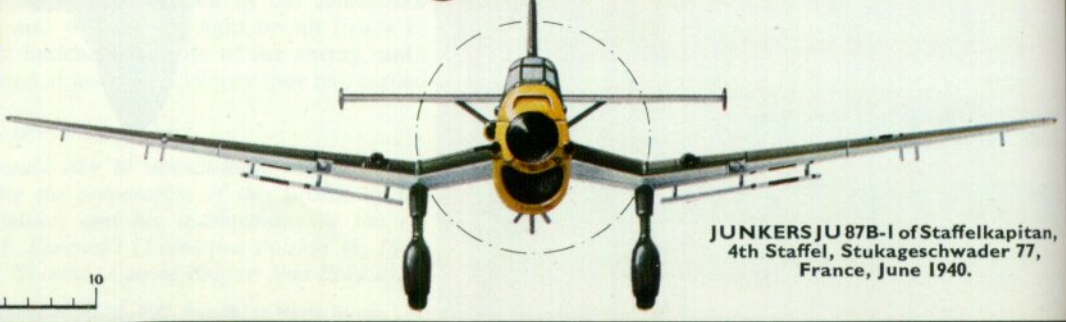
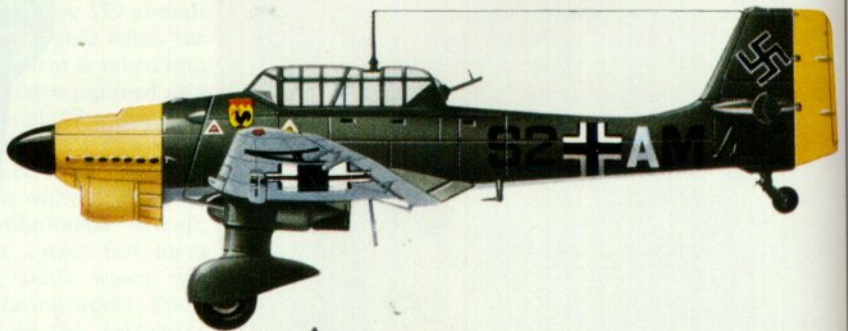
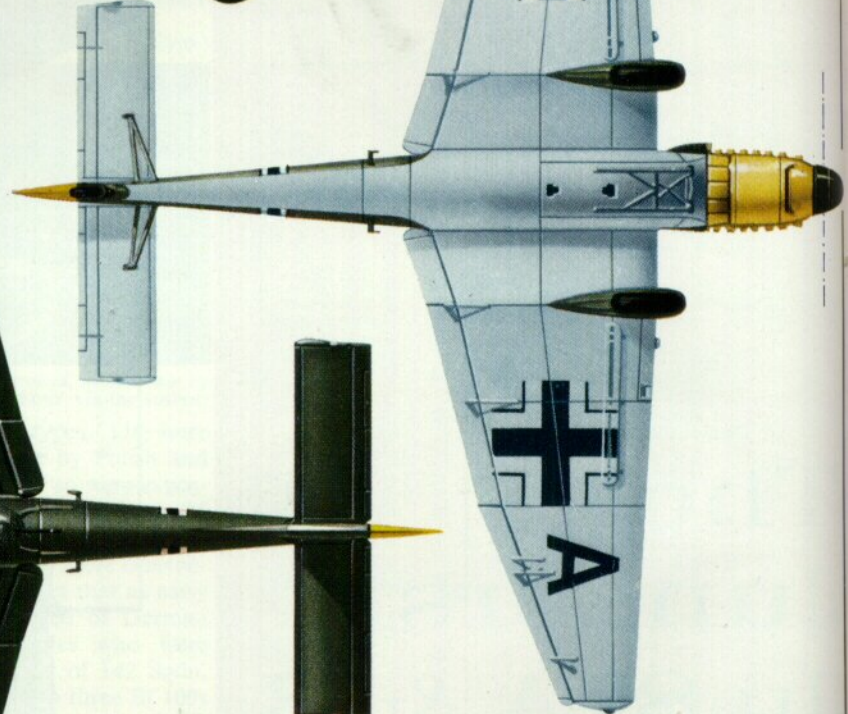
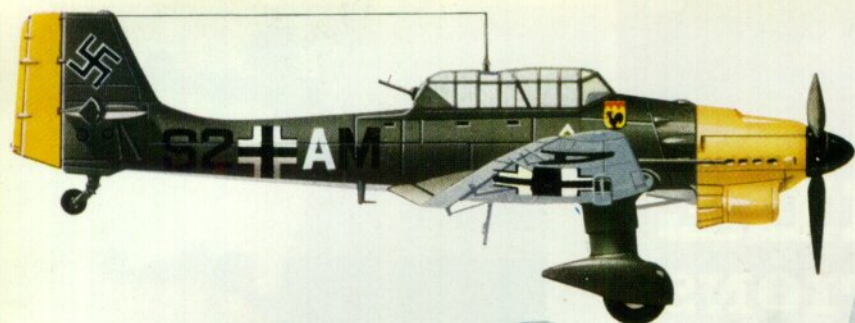


**PROFILE
PUBLICATIONS**

The
Junkers
Ju 87A & B

**NUMBER 76
TWO SHILLINGS**

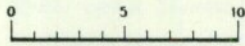




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Emblem of 4/St.G 77



JUNKERS JU 87B-1 of Staffelkapitan,
4th Staffel, Stukageschwader 77,
France, June 1940.

The Stuka in its classic rôle—a near-vertical dive, with sirens howling and bombs dropping away in a tight cluster.

The Junkers Ju 87A & B

by J. Richard Smith

The Junkers Ju 87 was hailed by the German propaganda machine as being the supreme weapon, and it seemed that its phenomenal successes in the Polish and French campaigns were to justify these claims. During these it was allowed to roam freely over enemy territory, creating havoc amongst troops and civilians alike as its ugly, cranked-wing silhouette and screaming sirens demoralised its opponents. As the most effective attack bomber of the opening months of W.W.II the Ju 87 was to become synonymous with the word "Stuka", an abbreviation of the German word *Sturzkampfflugzeug* or dive bomber. However, when it did at last encounter really effective fighter opposition, as at Dunkirk and in the Battle of Britain, it was decimated. Slow, unwieldy, and having but one puny machine gun to defend its rear, the all too numerous inadequacies of the machine were at last revealed.

The progenitor of the Ju 87 was the Swedish-built Junkers K.47 which made its first flight in 1928. Powered by a 480-h.p. Bristol Jupiter radial engine, the aircraft was classed as a two-seat interceptor, but was fitted with special wing bomb racks outboard of the airscrew arc and can be considered to be the forerunner of the Stuka. Ernst Udet (one of the architects of the new German Air Force), became enthusiastic as to the capabilities of the dive bomber after seeing a demonstration by Curtiss Helldivers at Cleveland, Ohio, on 27th September 1933 and a contract was placed for the construction of a German dive bomber.

Four companies produced projects, the Ju 87 designed by Dipl. Ing. Pohlmann being the Junkers entry. The first prototype, the Ju 87 V1, appeared in 1935, possessed twin fins and rudders and was powered by a 640-h.p. Rolls-Royce Kestrel V engine with fixed pitch airscrew. The machine crashed due to tail flutter, but was replaced shortly afterwards by the Ju 87 V2 which differed from its forerunner in having a 610-h.p. Junkers Jumo 210 A engine with controllable pitch propeller. Before this machine could take to the air, however, it was fitted with a new square fin and rudder with which it was hoped to cure the flutter trouble.

The Ju 87 V2, and generally similar V3 (D-UKYQ) were fitted with special dive brakes under the wings outboard of the undercarriage. In June 1936, the four competing designs performed at the newly founded *Erprobungstelle* (Experimental Station) at Rechlin for a production contract. The Ju 87 was pitted against the Arado Ar 81, the Blohm und Voss Ha 137 and the



Heinkel He 118. The Junkers and Heinkel designs soon proved their superiority over the other two machines, but it was not until the He 118 was crashed by Ernst Udet (owing to his unfamiliarity with the airscrew pitch control) that the Ju 87 was chosen.

By the late autumn of 1936 the fourth prototype, the Ju 87 V4 (D-UBIP) was flying, this employing larger and more angular vertical tail surfaces, improved visibility due to a lowered engine centre line, and a single 7.9 mm. MG 17 machine gun in the starboard wing. This aircraft was the forerunner of the Ju 87 A-0 pre-production variant of which ten were laid down in the summer of 1936. The Ju 87 A-0 differed from the fourth prototype solely in having a straight leading edge taper to simplify production, and was followed by the generally similar Ju 87 A-1 production model. Deliveries of the Ju 87 A-1 commenced during the spring of 1937. It was powered by a 635-h.p. Junkers Jumo 210 Da twelve cylinder engine which gave it a maximum speed of 199 m.p.h. at 12,000 ft. The Ju 87 A-2 was similar to the A-1, but employed a different airscrew with broader blades.

SERVICE IN SPAIN

During the summer of 1937, the first Ju 87 As entered service with *Stukageschwader 163 "Immelmann"*, a recently established unit and somewhat of an élite formation. St.G 163 was entrusted with the operational evaluation of the new dive bomber, developing suitable tactics for the machine. In December 1937, a flight of three Ju 87 A-1s, known as the "*Jolanthe Kette*", was detached from St.G 163 and sent to Spain as part of the Condor Legion. The three aircraft first saw action at Teruel, north-west of Valencia, and subsequently supported the Spanish Nationalists' drive towards the Mediterranean coast, destroying Republican communications. Later, they took part in the offensive in Catalonia and the fighting on the Ebro front, crews from St.G 163 being constantly changed in order to provide operational experience to as many as possible.

Although only three Ju 87 A-1s were delivered to Spain they were remarkably successful, the National-

The first prototype, showing twin tail and undercarriage "trousers".



Below: Rolls-Royce Kestrel V engine of the Ju 87V1, with distinctive radiator.



The V4 displays the early wing taper.

A moment of relaxation during the French campaign; aircrew and Ju 87 Bs of 10 Staffel, Lehrgeschwader 1. This operational training unit was redesignated as 11/St.G 5 in February 1942. (Photo: R. Ward collection)



ists having air superiority which enabled the dive bombers to operate freely. It was found that bombs could be accurately placed on roads, bridges and shipping targets; communications destroyed and enemy troops effectively cut-off in the mountainous Spanish countryside. In early 1939 several Ju 87 B-1s were sent to Spain to supplement the earlier variant. These took part in the bombing of shipping in the Spanish ports of Barcelona, Tarragona and Valencia, successfully sinking many enemy vessels and destroying much of the dock area. The legend of the Stuka was born.

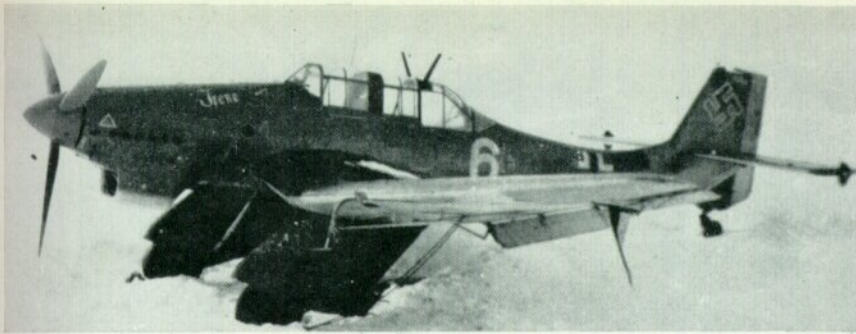
PRODUCTION OF THE Ju 87 B

During the summer of 1938, the Ju 87 B succeeded the A series on the production lines. Ten Ju 87 B-0 pre-production aircraft were built, the aircraft employing the 900-h.p. Junkers Jumo 211 A engine. In addition, the Ju 87 B series differed from earlier models in having an entirely re-designed cockpit canopy, enlarged vertical tail surfaces, "spats" in place of "trousers", and an additional 7.9 mm. MG 17 machine gun in the port wing. Length was increased by eight inches, empty and loaded weights were also increased and the machine normally carried a 1,100-lb. bomb under the fuselage or one 550-lb. and four 110-lb. bombs, the latter on underwing racks. The ten pre-production machines were followed by the generally similar Ju 87 B-1 of which four variants were produced. These were the standard Ju 87 B-1/U1, the B-1/U2 with alternative radio equipment, the B-1/U3 with additional armour and armoured glass for the gunner and the B-1/U4, which was similar to the U3, but with provision for a ski undercarriage. The Ju 87 B-1/Trop was similar, but had tropical filters and desert survival equipment.

In 1940 the Ju 87 B-1 was replaced in production by the Ju 87 B-2. This differed in being powered by a 1,100-h.p. Junkers Jumo 211 Da engine with hydraulically operated radiator cooling gills and modified undercarriage legs. The aircraft, which was the first

"Black men" (Luftwaffe slang for ground crew) bombing up the Ju 87 A-1s of St.G 163 "Immelmann" early in 1938.





The Ju 87 A saw service with the Condor Legion in Spain, and limited use as a dive-bombing trainer in the early stages of W.W.II.

Below: A kette of Ju 87 B-1s in flight, 1939.
(Photo: R. Ward collection)

really large production variant, could carry a 2,200-lb. bomb load in some circumstances. The Ju 87 B-2/U1, U2, U3 and U4 and B-2/Trop were similar modifications to those of the B-1 mentioned earlier, but pertaining to the B-2.

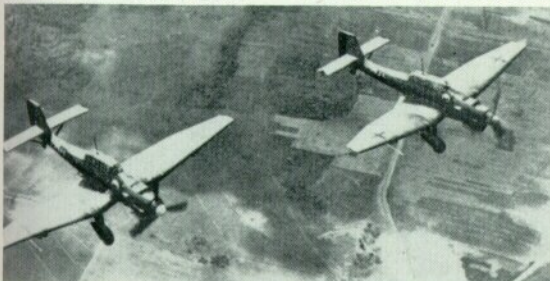
The Ju 87 C was a special conversion of the Ju 87 B-1 intended for operations from the *Kriegsmarine's* aircraft carrier *Graf Zeppelin* which was then under construction. The Ju 87 C-0 was stressed for catapulting, had an arrester hook, and was provided with electrically operated folding outer wing panels. Only a few Ju 87 C-0 and production C-1s were completed, and with the suspension of the aircraft carrier programme most machines were re-converted to B-1 standard. A unit was formed in December 1938 to operate the Ju 87 C from the *Graf Zeppelin*, designated 4.(Stuka)Staffel/Trägergruppe 186. The unit was equipped with standard Ju 87 As and Bs however, and although increased to full Gruppe strength on 16th September 1939, the unit never received the Ju 87 C.

One Ju 87 C-0 was fitted with an 88 mm. recoilless gun at Treuburg in 1944. The weapon was housed in the forward fuselage, firing through the airscrew disc, but the aircraft was damaged when the compensating charges failed to ignite.

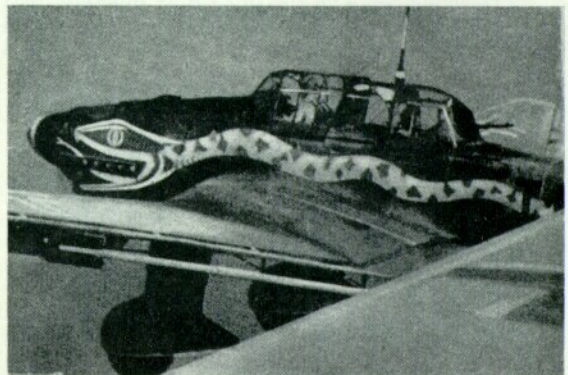
The final production variant of the Ju 87 based on the B series was the Ju 87 R, the "R" indicating *Reichweite* or range. This was a long-range modification of the Ju 87 B with larger fuel cells in the wing and provision for underwing drop tanks beneath the wings. The Ju 87 R-1 had a range of 875 miles as compared with 342 miles of the Ju 87 B-1. Other variants were the Ju 87 R-2, R-3 and R-4 which differed only in minor equipment.

Several experimental variants of the Ju 87 B were produced including an aircraft fitted with a 1,475-h.p. Daimler-Benz DB 605 engine. Diving trials were carried out in 1942, but the DB 605 engine was in great demand at that time and the project was abandoned.

Ju 87 Bs of I/St.G 2 "Immelmann" over France, 1940. At this time the Stuka was still thought to be an invincible weapon of Blitzkrieg, but the theory was soon to be shattered over the southern counties of England. (Photo: R. Ward collection)



Fighter units did not have a monopoly of colourful markings in the Luftwaffe, as evidenced by these two photographs. The shark's teeth appeared on an unidentified Ju 87 B-1 in 1939, the red and white snake on a B-2/Trop of II/St.G 2 in North Africa, 1941. (Photos: R. Ward collection and *Der Adler*)





The Ju 87 R was basically a B-model with enlarged wing fuel cells and underwing tanks. They were employed extensively by the Stukaverbände, as range was almost doubled.

The most advanced project based on the Ju 87 was the Ju 187 which was proposed in 1940. It was to have employed more streamlined contours, a retractable undercarriage, a Jumo 213 engine and remotely controlled defensive armament. With the failure of its progenitor the Ju 187 was abandoned.

“STUKA” CONSTRUCTION

The fuselage of the Ju 87 was of oval section built in two halves with the smooth metal skin flush riveted to Z-section frames and open-section stringers. The crew of pilot and radio operator/air gunner were seated back-to-back under a continuous glazed canopy with a sliding section for access. The crew were protected by 5 mm. armour plate, the pilot having a 50 mm. armoured glass windscreen. The wing was a two-spar structure with closely spaced ribs with stressed skin covering, the centre section being built integrally with the fuselage. The trailing edge of the wing was hinged on the Junkers “double wing” principle, the outer sections forming the ailerons, the inner the landing flaps. Hydraulically operated dive brakes were mounted under the outer wing sections, close to the undercarriage legs, these turning through 90°. The bomb was mounted on an arm which swung forwards and downwards to clear the airscrew during the dive which the pilot angled by a system of lines painted on the cabin which he lined up with the horizon.

THE Ju 87 IN W.W.II

At a quarter to five on the morning of 1st September 1939 German forces with strong air support invaded Poland. The Luftwaffe’s *Stukaverbände* had completely re-equipped with the Ju 87 B by this time, and nine Stuka *Gruppen* plus one *Staffel* were operational for the attack. These units were: I./St.G 1, I, II and

III./St.G 2, III./St.G 51, I./St.G 76, I and II./St.G 77, IV.(Stuka)/LG 1 and 4.(Stuka)/186, the total having a strength of 366 aircraft. In addition to the Ju 87 B, each *Stabskette* (headquarters flight) was equipped with a small number (usually three) Dornier Do 17s to guide the Stukas on to the target, the twin-engined bombers remaining aloft whilst the Ju 87s peeled off for the attack. The majority of the *Stukagruppen* were employed to support the *Wehrmacht’s* 3rd, 4th, 8th, 10th and 14th armies as they thrust into Poland. For the first time the notorious “Blitzkrieg” tactics were employed in which the dive bombers formed what was virtually long range artillery, knocking out strong points as they were encountered by the *Panzer Divisions*. The war against Poland culminated in the destruction of Warsaw in which the Ju 87 played no small part.

Without effective opposition the dive bomber shattered all opposition, much to the delight of its protagonists. During the winter of 1939–40 *Luftwaffe* activity was restricted to the minimum, but on 9th April 1940 German forces invaded Denmark and Norway the assault being known as Operation *Weserübung*. Only one dive bomber *Gruppe*, I./St.G 1 with Ju 87 Rs, took part in the operation. Denmark fell on the first day and many of the major towns in southern Norway were captured; 2./St.G 1 moving from Kiel to Stavanger on the 10th. I./St.G 1 carried out various attacks on Norwegian strong points, one such notable being the bombing of Vigra radio station on 15th April when a Ju 87 rammed one of the aerials putting the transmitter out of action.

Before the campaign in Norway was complete, Hitler launched his assault on the Low Countries and France, nine Stuka *Gruppen* with 320 Ju 87 B and 38 Ju 87 Rs taking part. The dive bombing forces were

Two contrasting colour schemes displayed by Stukas captured in North Africa. The spotted Ju 87 B-2/Trop operated with 3/St.G 1 and carries the codes A 5 + H L and that unit’s “crow” emblem. The unusual striped scheme is seen here on a machine of 5/St.G 2 (“Immelmann”).





A Hungarian Air Force training machine, summer 1942.

(Photo: G. Cattaneo)

under the control of *VIII Fliegerkorps* commanded by *General Feldmarschall* Wolfram von Richtofen. Most Dutch and Belgian Air Force aircraft were destroyed on the ground following surprise attacks on their airfields, and the *l'Armée de l'Air* with obsolescent machines was largely ineffectual. With virtually no effective opposition the Ju 87 was again hailed as the wonder weapon, as it attacked troop concentrations and strongpoints and co-operated closely with the *Panzer Divisions* as they thrust deep into France. By the end of the first week of the assault Dutch forces had surrendered, but not before the *Luftwaffe* virtually destroyed the ancient port of Rotterdam. The German propaganda machine hailed this as another feat of the Stuka, but it was in fact carried out by Heinkel He 111P bombers from KG 54.

On 26th May 1940 the troops of the British Expe-

ditionary Force began to evacuate from the encircled port of Dunkirk. The *Luftwaffe* was entrusted with the task of smashing the evacuation, but for the first time they met effective aerial opposition in the shape of Hurricanes and Spitfires of R.A.F. Fighter Command. The initiative lay with the *Luftwaffe*, making it difficult for the British fighter squadrons to maintain continuous cover over the bridgehead. Some Ju 87s appeared between R.A.F. patrols and bombed the beaches, although little damage was caused as the soft sand absorbed the bomb explosions. When R.A.F. fighters were in position the Ju 87s, although heavily escorted by Bf 109 Es, suffered severe losses and the Stuka's supremacy was challenged for the first time. By 4th June the evacuation had been successfully completed and on 6th July, the *Luftwaffe* re-grouped, many units being re-designated to bring *Geschwader*



Left: The Stuka contributed considerably to the Allied defeats in the Balkan campaign. The mountainous countryside rendered such favourite targets as roads and bridges of vital importance. Right: The headquarters flight of III/St.G 2 in flight over Russia. The machine in the left foreground is flown by the Gruppe C.O., Hans Ulrich Rudel.



(Photos: R. Ward collection)

Left: Stukas and bomb sledges on an airstrip in the Balkans, summer 1941. Right: Probably the best-known Stuka unit was III/St.G 2 "Immelmann", commanded for many months by the legendary Hans Ulrich Rudel. Here a snow-camouflaged B-2 of that unit returns to base from a sortie over the Soviet lines in the winter of 1941.





Stuka pilot, 1940. Note sliding rear canopy section.

up to full strength of three *Gruppen*. Amongst the *Stukaverbände*, III./St.G 51 became II./St.G 1, I.(*Stuka*)/186 became III./St.G 1 and I./St.G 76 became III./St.G 77.

Early in July 1940 the *Luftwaffe* began making tentative attacks on British coastal shipping, a special force comprising fighters from JG 26 and JG 53, bombers from KG 2 and sixty dive bombers, assembling under the command of Obst. Johannes Fink. The Stuka operated with fighter cover, but as at Dunkirk they found they were not going to have things all their own way. These operations were a prelude to the major assault in which it was hoped to destroy the R.A.F. and prepare the way for "Operation Sealion"—the invasion of the British Isles. On 20th July, 316 Ju 87s were operational with *Luftflotten* 2 and 3, the majority operating under the control of *VIII Fliegerkorps*.

The first really major dive bombing operations against British shipping took place on 8th August, when three separate attacks were made on a convoy. Although escorted by Bf 109 E fighters, Ju 87 losses were severe, at least one formation being scattered before it could reach the target. Five days later a force of Stukas from *VIII Fliegerkorps* set out to bomb Middle Wallop airfield, but none reached the target owing to the massive destruction wreaked by No. 609 Squadron's Spitfires—the day being dubbed the "glorious 13th" in the squadron records. On 15th,

forty Ju 87s with heavy fighter escort attacked Hawkinge and Lympne airfields, and although intercepted by No. 54 Squadron's Spitfires, they severely damaged the latter. The following day St.G 2 attacked Tangmere airfield suffering severe losses in the process. Two days later St.G 77 dive bombed the Poling radar station, losing twelve aircraft for their pains. This was the final blow for the dive bomber forces, and *VIII Fliegerkorps* was withdrawn to the Pas de Calais area on 29th August to take part in the proposed invasion, if and when it came. The three remaining *Stukagruppen*, II./St.G 1, II./St.G 2 and the recently formed I./St.G 3 made an abortive raid on 30th August 1940, but this was virtually the last time the aircraft was seen over the British Isles.

MIDDLE EAST AND RUSSIA

Early in January 1941, I./St.G 1 and II./St.G 2 and the *Stab* flight of St.G 3 were transferred to Trapani in Sicily with the aim of making a surprise attack on the Gibraltar–Malta–Alexandria convoys. On 10th January II./St.G 2 under Maj. Enneccerus attacked a British convoy escorted by a cruiser and the aircraft carrier H.M.S. *Illustrious*. *Illustrious* was hit by four 1,100-lb. bombs and was all but sunk, but managed to reach Valetta harbour in Malta. A few days later I./St.G 1 under Hptm. Werner Hozzel attacked the aircraft carrier in the harbour, 2./St.G 1 losing all its pilots except the *Staffelkapitän*. Four hits were made on the carrier, but again her armoured deck saved her from a watery grave.

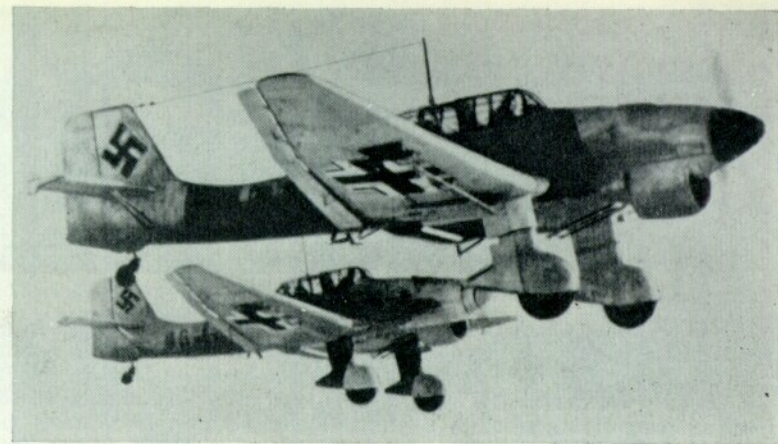
On 6th April 1941, German forces invaded Yugoslavia and Greece, *Luftwaffe* forces operating under the control of *Luftflotte* 4. Two dive bomber *Gruppen* transferred from France (I and III./St.G 2) and one from North Africa took part in the attack. The campaign opened with large scale attacks on Belgrade, and Yugoslavia soon fell. The *Luftwaffe* then switched its attentions to the invasion of Greece, and Athens fell on 27th April.

The early completion of the Balkans campaign prompted Germany to attack Crete on 20th May 1941. The main assault was carried out by DFS 230 gliders towed by Ju 52/3m transports, but St.G 2's Ju 87 Bs participated in attacks on Royal Navy cruisers and destroyers. Flying with I./St.G 2 was a young pilot who later was to become almost legendary within the *Luftwaffe*. His name was Hans Ulrich Rudel, who

Right: Ground crew strain to turn the engine crank handle of a B-1 model.

A gaudy B-2 in a Balkan airfield.





Above: Two Ju 87 B-2s of II/St.G 1 over Russia, winter 1941. The machine in the background retains the code (6G) of III/St.G 51, redesignated as II/St.G 1 in July 1940. (Photo: R. Ward collection)

Left: A pre-war B-1 beginning to pull out of its dive as the bomb drops away.

at the end of the war reached the rank of *Oberst* (Colonel) and became the only person to be awarded the Knight's Cross with Golden Oak Leaves. The campaign in Crete was successfully completed although both the *Luftwaffe* and the *Wehrmacht* suffered severe losses.

The 22nd June 1941 was the date set for "Operation Barbarossa", the attack over a 1,000-mile front on the Soviet Union. Three Army Groups were supported by four Air Fleets; *Luftflotte 5* in Northern Norway, *Luftflotte 1* in Northern Russia, *Luftflotte 2* in Central Russia and *Luftflotte 4* in Southern Russia and the Crimea. The dive bomber forces of *VIII Fliegerkorps* comprised eight *Stukagruppen*; *Stab, II* and *III./St.G 1, Stab I* and *III./St.G 2, Stab I, II*, and *III./St.G 77* and *IV.(Stuka)/LG 1* with a total of 334 Ju 87 Bs. The Soviet Air Force had suffered severe casualties, and the ugly Junkers dive bomber was again able to roam freely over enemy territory being rapidly transferred from one sector of the front to another. On 23rd September 1941, I and *III./St.G 2* based at Tyrkovo attacked the Russian battleships *October Revolution* and *Marat* at Kronstadt. The *Marat* was sunk by a 2,200-lb. bomb dropped at a 90° angle by Rudel, but the other vessel escaped with light damage.

In December 1941, *Luftflotte 2* transferred to the Mediterranean with the object of finally "neutralising" the island fortress of Malta and driving British forces out of Africa. At its disposal were Ju 87 Bs from *Stab, I, II* and *III./St.G 3* plus the *Ergänzungs* (training and replacement) *Gruppe* of *St.G 1*. The dive bomber forces operated mainly in North Africa, contributing to the capture of Bir Hakim in early June 1942. By this time however, the *Luftwaffe* in the Middle East was suffering from lack of fuel, sorties being substantially reduced by August 1942. *St.G 3* had, like the other *Stukageschwader*, begun to re-equip with the much improved Ju 87 D which does not come within the scope of this work.

The final unit to equip with the Ju 87 B was *I Gruppe/St.G 5* which was formed from *IV.(Stuka)/LG 1* in February 1942. The unit was based in Northern Norway and Finland and commanded by

Maj. Karl Stepp. The main function of the *Gruppe* was to attack the Murmansk railway which was the only link between that northern port and the south, and was used to bring urgently needed supplies from Britain and America to the Soviet Union.

FOREIGN SERVICE

Before the end of 1940 it was decided to supply the Ju 87 B to several of Germany's allies. Roumania and Hungary received the Ju 87 B-2, whilst the Italian Air Force was equipped with the Ju 87 B-1/Trop. It was widely thought that the Ju 87 B-1/Trop was in fact built under licence by the Breda concern under the designation Ba 201. The Ba 201 was an entirely different design, no Ju 87s being constructed in Italy, those serving with the *Regia Aeronautica* being German built.

The Ju 87 B was operated by the *Regia Aeronautica's* 960 and 970 *Gruppi Bombardamento* and the 208ma, 238ma and 239ma *Squadriglia*. The 209ma Sq. used them in Sicily late in 1940. Hungarian aircraft were operated by that Air Force's 102/1 Dive Bomber Squadron which often co-operated closely with *St.G 77* on the Eastern Front.

LUFTWAFFE UNITS AND MARKINGS

The basic *Luftwaffe* unit was the *Geschwader* or wing which had a nominal strength of 100-150 aircraft depending on availability and serviceability of air-

This Ju 87 B-1 was probably photographed over Poland in 1939. The starboard undercarriage leg has been shot off, and the port leg apparently jettisoned. Close examination of the original negative fails to reveal evidence of re-touching.





Left to right: Gunner's position in Ju 87 A; MG 15 gun position of a Ju 87 B-1; Ju 87 B-1 instrument panel.

craft. Each Stuka *Geschwader* or dive bomber wing was usually sub-divided into three *Gruppen* each normally comprising three *Staffeln*. The *Geschwader* and *Staffeln* were identified by an Arabic numeral, *Gruppen* being distinguished by a Roman figure. For example *Stukageschwader* 77 was made up of a *Geschwader Stab* (headquarters flight) and three *Gruppen*—I, II and III./St.G 77. Each *Gruppe* comprised in turn a *Gruppe Stab* and three *Staffeln*—II *Gruppe* having for example the 4th, 5th and 6th *Staffeln*.

JUNKERS Ju 87 A-1 SPECIFICATION

Powerplant: One 635-h.p. Junkers Jumo 210 Da twelve cylinder inverted Vee liquid cooled in-line engine.
Dimensions: Span 45 ft. 3½ in. Length 35 ft. 5⅝ in. Height 12 ft. 9½ in. Wing area 343·3 sq. ft.
Weights: Empty 5,104 lb. Loaded 7,495 lb.
Performance: Maximum speed 199 m.p.h. at 12,000 ft. Maximum range 620 miles.
Armament: One fixed 7·9 mm. MG 17 machine gun in starboard wing and one movable 7·9 mm. MG 15 on mounting in rear cockpit. Maximum bomb load (i.e. with one crew member) 1,100 lb.

JUNKERS Ju 87 B-1

Powerplant: One 900-h.p. Junkers Jumo 211 A-1 twelve cylinder inverted Vee liquid cooled in-line engine.
Dimensions: Span 45 ft. 3½ in. Length 36 ft. 1 in. Height 13 ft. 10½ in. Wing area 343·3 sq. ft.
Weights: Empty 6,051 lb. Loaded 9,336 lb.
Performance: Maximum speed 217 m.p.h. at 16,405 ft., 186 m.p.h. at sea level. Landing speed 68 m.p.h. Climb 12 minutes to 13,500 ft. Service ceiling 26,248 ft. Range 342 miles at 18,045 ft.
Armament: Two fixed 7·9 mm. MG 17 machine guns in wings firing forward, one movable 7·9 mm. MG 15 on mounting in rear cockpit. Maximum bomb load one 1,100-lb. and four 110-lb. bombs.

JUNKERS Ju 87 B-2

Powerplant: One 1,100-h.p. Junkers Jumo 211 Da twelve cylinder inverted Vee liquid cooled in-line engine.
Dimensions: As Ju 87 B-1.
Weights: Empty 6,085 lb. Loaded 9,370 lb.
Performance: Maximum speed 232 m.p.h. at 13,500 ft. Cruising speed 175 m.p.h. at 15,000 ft. Range 370 miles with a 1,100-lb. bomb load.
Armament: As Ju 87 B-1.

All *Luftwaffe Geschwader* and *Gruppen*, with the exception of the single-engined fighter units, employed a four symbol code system painted on the fuselage sides and occasionally repeated underwing. The first two symbols positioned forward of the fuselage *Balkankreuz* (cross) always comprised a number/letter combination, and identified the *Geschwader*. The letter positioned directly to the right of the *Balkankreuz* (often painted in the *Staffel* colour) was the individual aircraft identification, and the last letter indicated the *Staffel*.

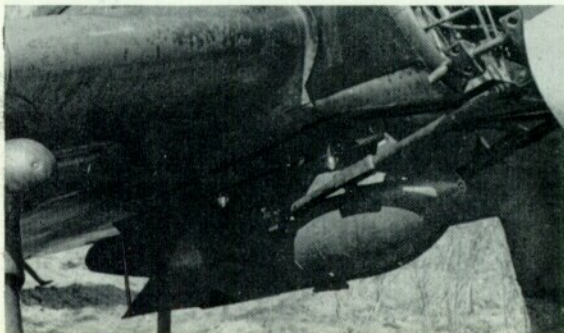
CODE LETTER ALLOCATIONS

Letter	Sub-unit	Colour
A	Geschwader Stab	Blue
B	I Gruppe Stab	Green
C	II Gruppe Stab	Green
D	III Gruppe Stab	Green
E	IV Gruppe Stab	Green
F	V Gruppe Stab	Green
H	I Staffel I Gruppe	White
K	2 Staffel I Gruppe	Red
L	3 Staffel I Gruppe	Yellow
M	4 Staffel II Gruppe	White
N	5 Staffel II Gruppe	Red
P	6 Staffel II Gruppe	Yellow
R	7 Staffel III Gruppe	White
S	8 Staffel III Gruppe	Red
T	9 Staffel III Gruppe	Yellow
U	10 Staffel IV Gruppe	White
V	11 Staffel IV Gruppe	Red
W	12 Staffel IV Gruppe	Yellow
X	13 Staffel V Gruppe	White
Y	14 Staffel V Gruppe	Red
Z	15 Staffel V Gruppe	Yellow

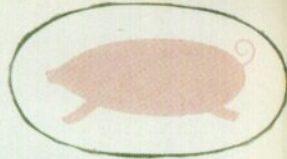
LUFTWAFFE UNITS OPERATING THE Ju 87 B

Unit	Code	Commanders and Notes
St.G 1	A 5	Gen. Maj. Walter Hagen RK-EL (July 1940 to November 1942). I <i>Gruppe</i> established before the war; operations in Poland and France. II and III <i>Gruppen</i> formed on 6th July 1940 from III./St.G 51 and I.(Stuka)/186 respectively. Took part in the Battle of Britain, I./St.G 1 to N. Africa, later joining the other two <i>Gruppen</i> in Russia. Became SG 1 in October 1943.
St.G 2	T 6	Obst. Oskar Dinort RK-EL (1939 to April 1942). Obst. Paul-Werner Hozzel RK (April 1942 to November 1942). Named "Immelmann", I, II and III <i>Gruppen</i> being formed pre-war from

Machine of 3/St.G 2 with SC 500 and PC 500 bombs on the main crutch.



Ju 87B-1, Condor Legion,
Barcelona area, Spain, 1939.



"Jolanthe the Pig" emblem
of the "Jolanthe Kette".

Ju 87B-2, Stab III/St.G 2 "Immelmann", Russia, 1941. Aircraft of Maj. Hans Ulrich Rudel.



III/St.G 2
"Immelmann".



3/St.G 3.



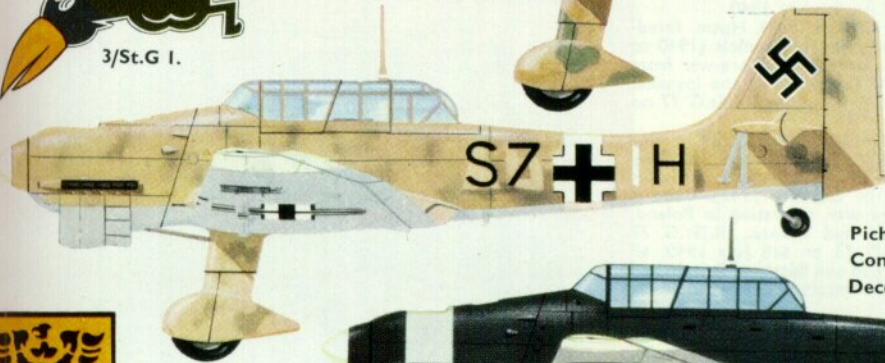
Ju 87B-2, 3/St.G 3,
Balkans, 1941.

Ju 87B-2 Trop.,
3/St.G 3, Daba,
Western Desert,
1942.



3/St.G 1.

Ju 87B-2 Trop., 1st Staffel, St.G 3,
Daba, Western Desert, 1942. Note
overpainted code (A 5) of St.G 1,
and faded camouflage.



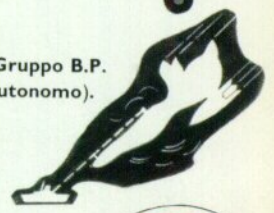
Ju 87B-2, 209 Squadriglia, 97 Gruppo
Bombardieri in
Pichiata (Ground Attack)
Comiso, Sicily,
December 1940.



3/St.G 2
"Immelmann".

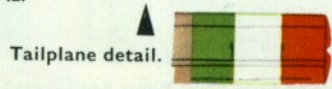


97 Gruppo B.P.
(Autonomo).



Ju 87B-2 trainer, Hungarian Air Force,
Veszprem airfield, 1942.

2/St.G 2
"Immelmann".



Tailplane detail.



A B-2 over the Mediterranean.

- St.G 163. Operations in Poland, France, the Low Countries, the Battle of Britain. II./St.G 2 to N. Africa, I and III *Gruppen* taking part in the assault on the Balkans and Russia. By early 1942 all *Gruppen* were operating on the Eastern Front, the *Geschwader* being re-designated SG 2 in October 1943.
- St.G 3 S 7 Obst. Walter Sigel RK-EL (1940 to 1942). I *Gruppe* formed during the summer of 1940, two further *Gruppen* being added later. Battle of Britain, later to N. Africa, replacing all other *Stukagruppen* by early 1942. Became SG 3 in October 1943.
- St.G 5 J 9 Maj. Karl Heinz Stepp RK-EL (February 1942 to October 1943). I *Gruppe* only formed from IV.(*Stuka*)/LG I in February 1942. Operated in N. Russia and Finland, becoming I./SG 5 in October 1943.
- St.G 51 6 G Hptm. Anton Keil (1939 to July 1940). III *Gruppe* only formed before the war. Took part in the assaults on France and the Low Countries, becoming II./St.G I on 6th July 1940.
- St.G 76 F I Hptm. Karl Bode (1939 to 1940), Hptm. Friedrich Karl von Dalwigk zu Lichtenfels (1940 to July 1940). I *Gruppe* only formed pre-war from elements of KG 76. Took part in the invasion of Poland and France, becoming III./St.G 77 on 6th July 1940.
- St.G 77 S 2 Obst. Günther Schwarzkopff RK (1939 to May 1940), Obstlt. Graf von Schönborn RK (May 1940 to summer 1942), Maj. Alfons Orthofer RK (summer 1942 to October 1942). I and II *Gruppen* formed pre-war, operating in Poland, the Low Countries and France. III./St.G 77 formed from I./St.G 76 on 6th July 1940, all *Gruppen* taking part in the Battle of Britain and the assault on Russia. Became SG 77 in October 1943.

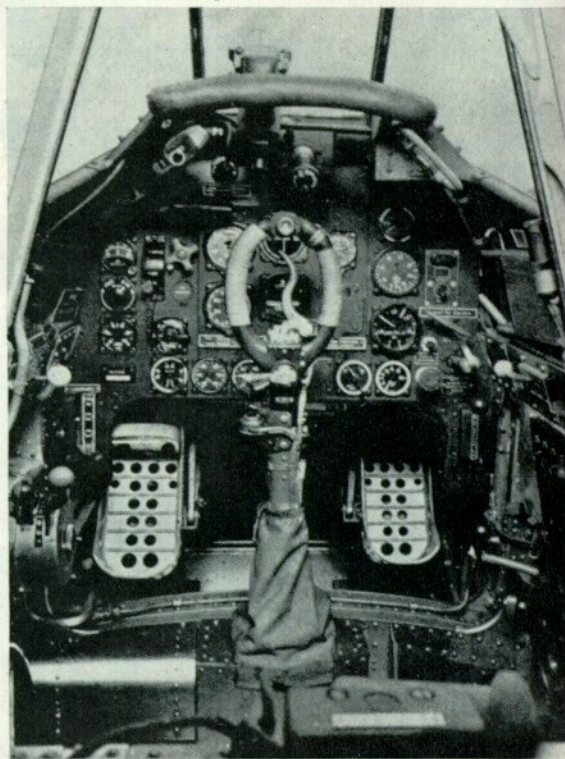
- LG I L I Hptm. von Brauchitsch (1939 to February 1942). IV.(*Stuka*)*Gruppe* only (the other four *Gruppen* being bomber or heavy fighter formations) formed pre-war. Operated in Poland, France, Battle of Britain and Russia, being re-designated I./St.G 5 in February 1942.
- Träg.Gr 186 Hptm. Helmut Malcke (September 1939 to July 1940). I.(*Stuka*)*Gruppe* only (the other *Gruppe* being a fighter formation). Formed in December 1938 as 4.(*Stuka*)/186, being increased to *Gruppe* strength on 16th September 1939. Became III./St.G I on 6th July 1940.

Note: "RK" denotes holder of the Ritterkreuz or Knight's Cross. "EL" indicates that he was also awarded the Eichenlaub or Oak Leaves.

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Author and publishers wish to acknowledge their indebtedness to the officials of "Gruppe 66" for invaluable assistance during the preparation of this Profile.

Pilot's position in the Ju 87A.



Jumo 211 Da powerplant of a Ju 87 B-2 with cowling removed. Note also contoured armour back-shield in cockpit.

(Photo: R Ward collection.)

