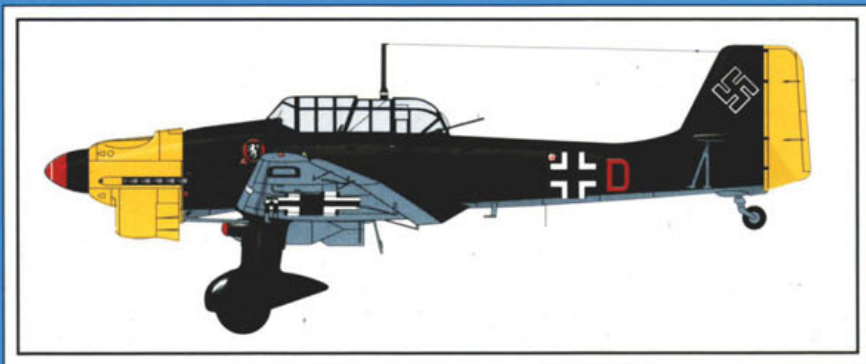


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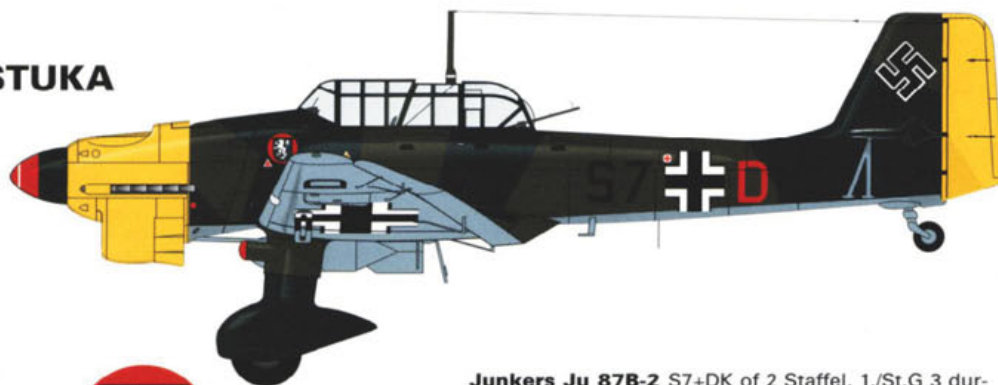
JUNKERS Ju 87 STUKA

BY ALAN W. HALL

A Junkers Ju 87B-2 of St.G2 seen on a Greek airfield during the German invasion. The aircraft has a yellow nose, rudder and elevators which were typical of the Geschwader taking part in this action during the early part of 1942. A 2,000 kg bomb lies near the aircraft ready for loading.

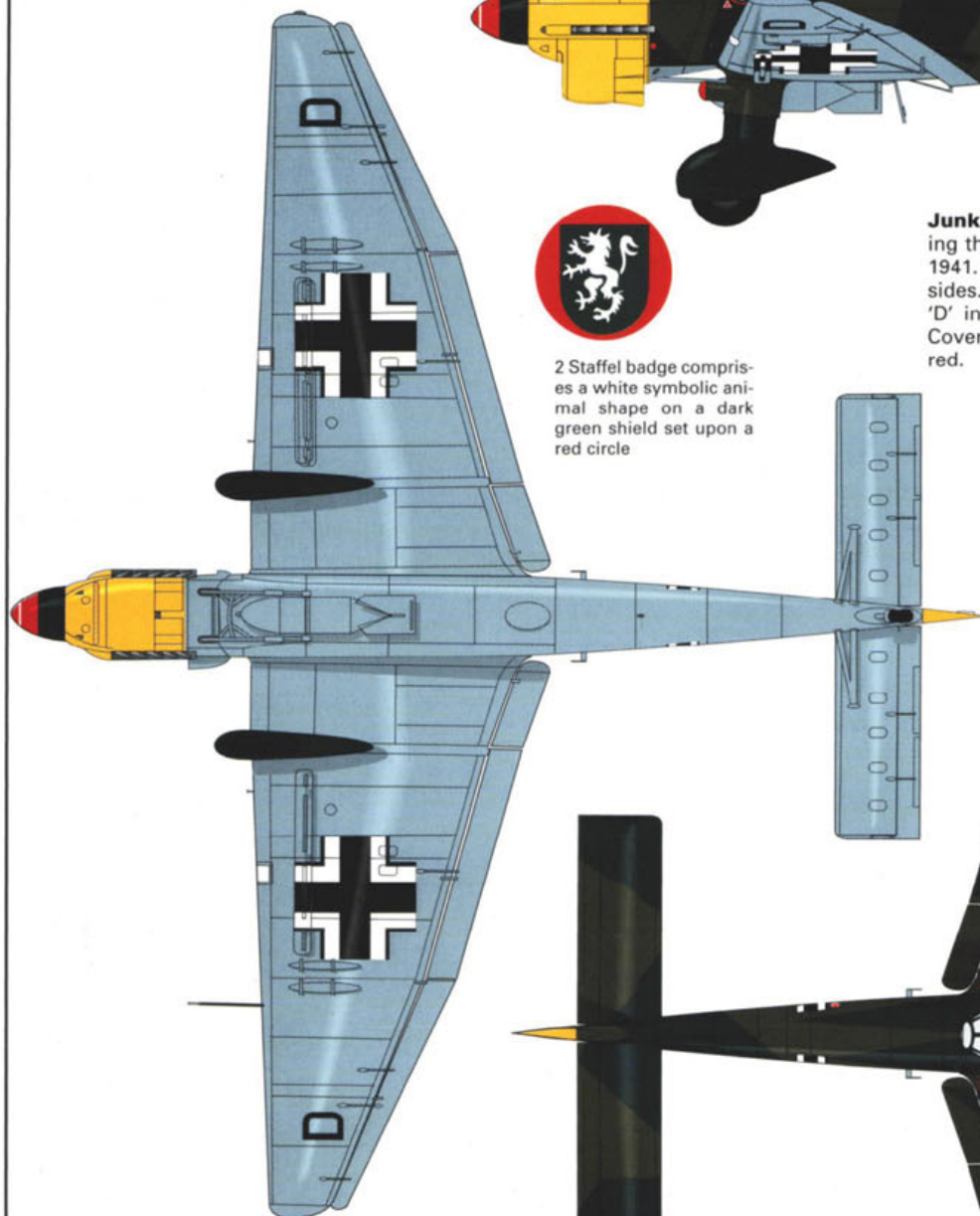


JUNKERS Ju 87 STUKA



2 Staffel badge comprises a white symbolic animal shape on a dark green shield set upon a red circle

Junkers Ju 87B-2 S7+DK of 2 Staffel, 1./St.G 3 during the attack on the Balkan states and Greece, April 1941. RLM 70/71 uppersurfaces with RLM 65 undersides. Yellow nose and rudder. Black codes with letter 'D' in red. Red spinner tip contains a white stripe. Cover of siren mount on undercarriage leg painted in red.



DRAWINGS BY DAVID HOWLEY



JUNKERS Ju 87 STUKA

By Alan W.Hall

THE use of dive bombers in modern warfare originated in the United States, was perfected and used to deadly purpose by Germany before and during World 2 and since then has almost been forgotten. Aircraft used for this role extended the ideas started in the latter stages of World War 1 which required accurate placement of bombs on a target with the minimum danger to the aircrew engaged. Aircraft range was not a criteria as dive bombers, at least when operated by land forces, became an extension of the field commander's artillery forces but one which could destroy 'over the horizon' targets that could not be reached by more conventional means. At sea the dive bomber, when used by the Americans and Japanese during the war, became a decisive feature in carrier-versus-carrier engagements but were in effect an extension of the naval commander's big guns on board battleships and

The first operational version of the Stuka was the Ju 87A-1. It differed from all following versions by having a different cockpit canopy, larger spatted wheel fairings and a squarer shape to the nose radiator. This one was operated by 1/St.G162 'Immelmann' carrying its pre-war numerical codes on the fuselage and underwing. Three of these aircraft were to serve in the Spanish Civil War on the Nationalist side.

cruisers. In other words the dive bomber became a purely tactical weapon and if used correctly against inexperienced opposition created such havoc and confusion that the accuracy of its attack was considerably enhanced by the enemy failing to put up effective counter measures. Conversely, if ground fire was accurate, the gunners not mesmerised by the fury of the attack and maintained their discipline putting up a veritable wall of short range fire, the dive

This pre-war photograph of a Junkers Ju 87B-1, judging by the red band to the swastika, is otherwise painted in RLM 70/71 green with light blue RLM 65 on the undersides. There is no cockpit armour behind the pilot's seat. (IWM)

bomber suffered heavy casualties.

Out of the two World War 2 exponents of dive bombing, the USA and Germany, the latter had the advantage of being able to try out these methods of accurate target elimination during the Spanish Civil War. Early ver-



Seen from head on this early production version of the Ju 87B-1 had narrower metal propeller blades. The radiator flaps are in the open position. It carries no armament and the bulges on the undercarriage spats are for sirens which were used to demoralise an enemy during dive bombing attacks, though not fitted in this case.

sions of the Junkers Ju 87 attacked government troop positions and tactical targets like bridges and railway tracks very effectively. They met little opposition and the myth that the Stuka was invincible was born. Luckily for some, the Germans believed their own propaganda and although later and improved versions of the Ju 87 came into squadron service before the Battle of Britain, their use was strictly limited when countered by determined fighter opposition and disciplined ground fire. Losses were high and it was realised in time that the Battle of Britain was not a tactical battle ground even though the Ju 87 did severe damage to radar installations along the coast and were used to some effect against convoy targets in the English Channel.

Having withdrawn the Stukageschwader from northern France they were used with effect in the Mediterranean and North Africa where once again they were able to use their tactical powers against lightly protected targets on land and sea. Almost at the same time Luftwaffe Ju 87 assets were called upon to soften up pockets of resistance during the initial stages of Operation Barbarossa, the

Below: High over the North African desert this Ju 87B-2/Trop of St.G 3 was one of many used in the highly mobile desert war. They were particularly effective in the two battles that developed for control of Tobruk and for strafing columns of tanks and soft skinned vehicles on the move in the desert. The deep radiator below and large oil cooler intake on top of the nose are distinctive features of this variant



JUNKERS Ju 87 camouflage and markings

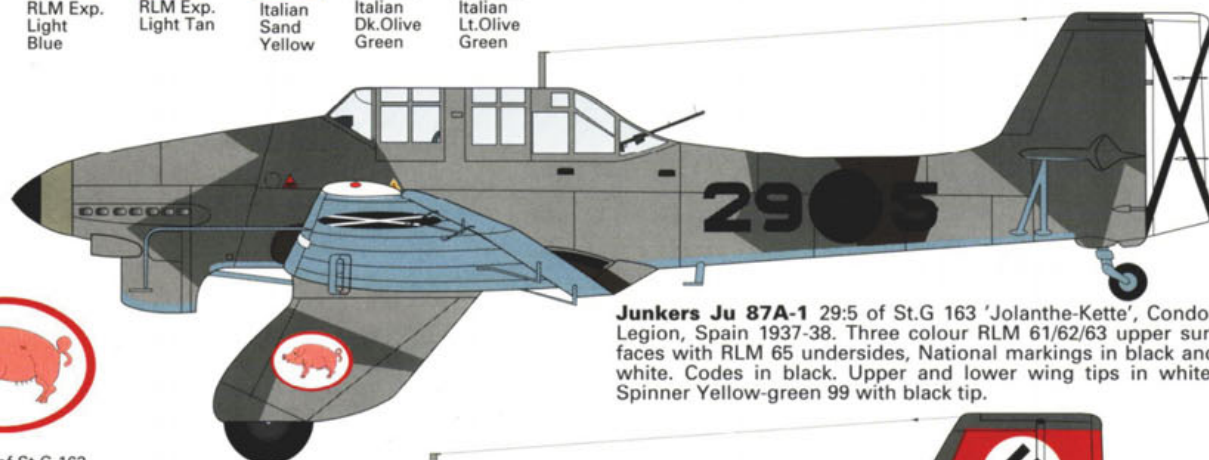
JUNKERS JU 87 COLOUR KEY

RLM 04 Yellow	RLM 23 Red	RLM 24 Dark Blue	RLM 25 Light Green	RLM 26 Dark Brown	RLM 61 Dark Brown	RLM 62 Green	RLM 63 Green-grey	RLM 65 Light Blue	RLM 70 Black Green	RLM 71 Dark Green	RLM 78 Light Blue	RLM 79 Sand Yellow
RLM Exp. Dk. Olive Green	RLM Exp. Light Blue	RLM Exp. Light Tan	Italian Sand Yellow	Italian Dk.Olive Green	Italian Lt.Olive Green							

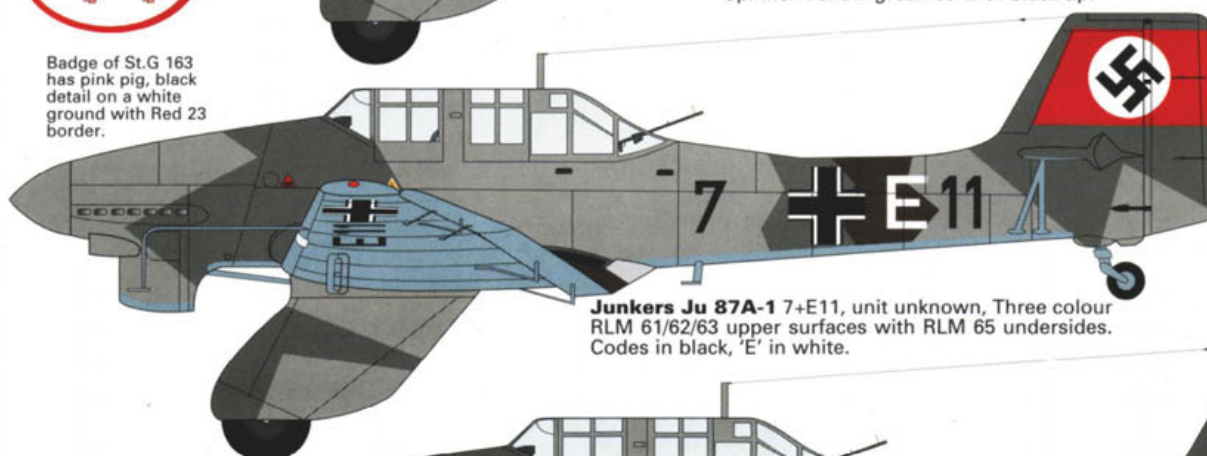
DRAWINGS BY DAVID HOWLEY



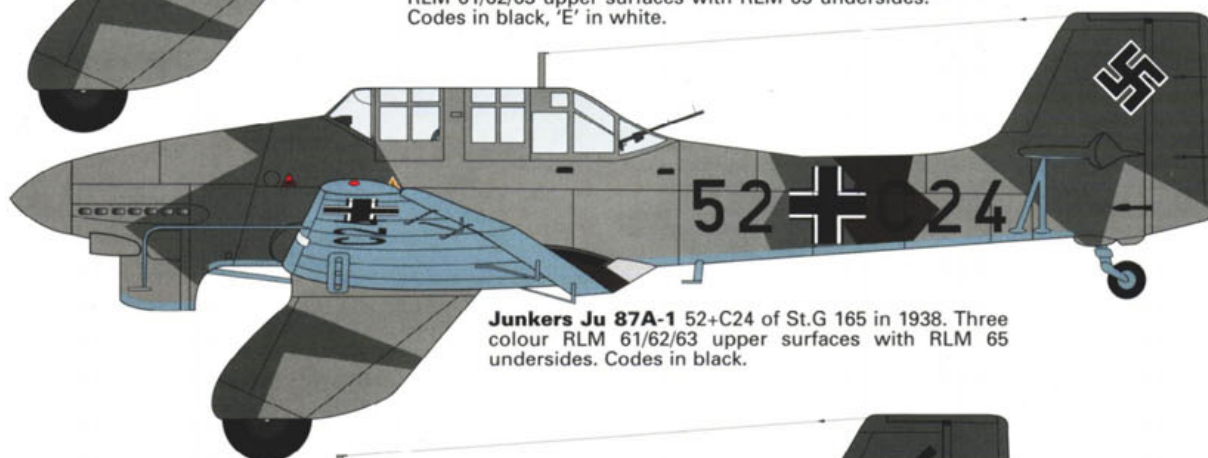
Badge of St.G 163 has pink pig, black detail on a white ground with Red 23 border.



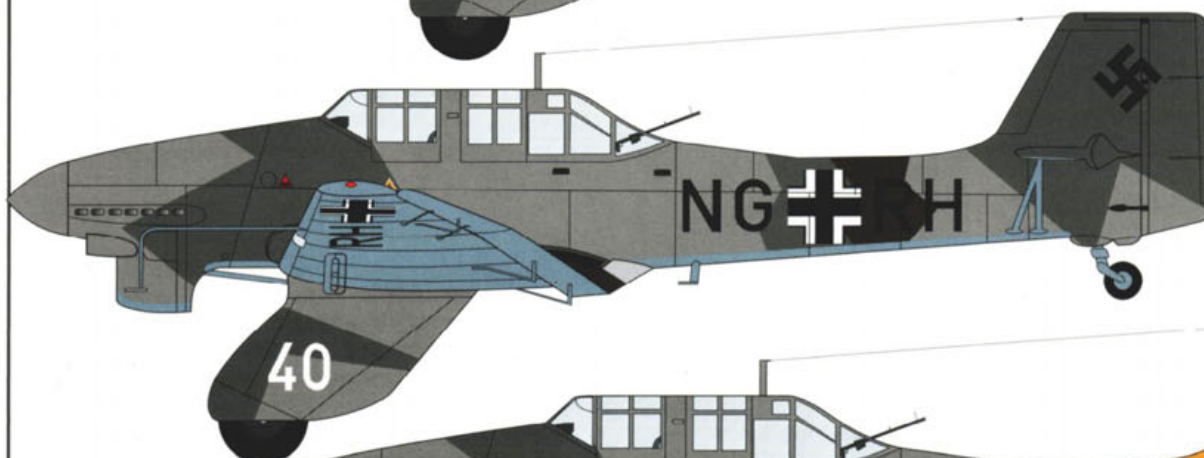
Junkers Ju 87A-1 29:5 of St.G 163 'Jolanthe-Kette', Condor Legion, Spain 1937-38. Three colour RLM 61/62/63 upper surfaces with RLM 65 undersides, National markings in black and white. Codes in black. Upper and lower wing tips in white. Spinner Yellow-green 99 with black tip.



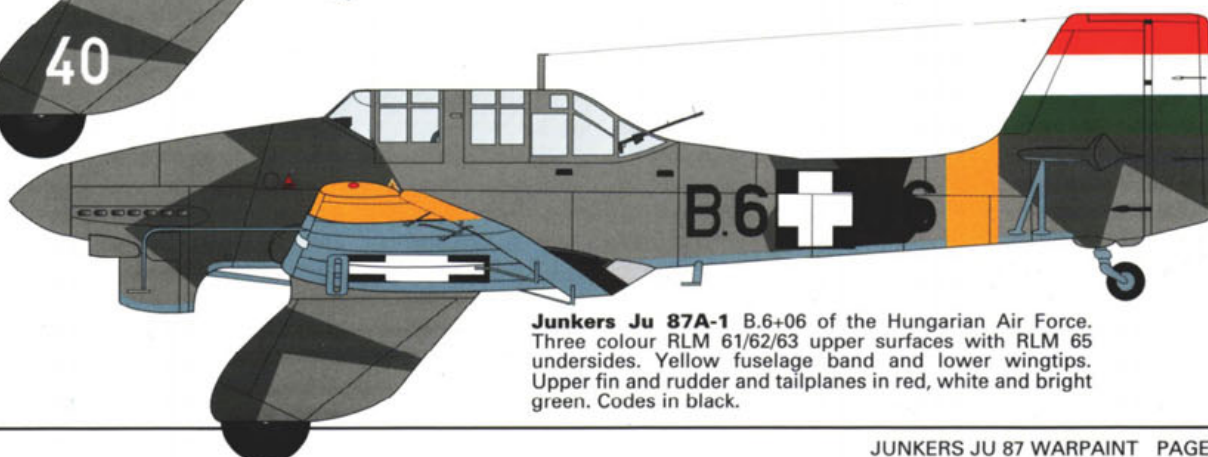
Junkers Ju 87A-1 7+E11, unit unknown. Three colour RLM 61/62/63 upper surfaces with RLM 65 undersides. Codes in black, 'E' in white.



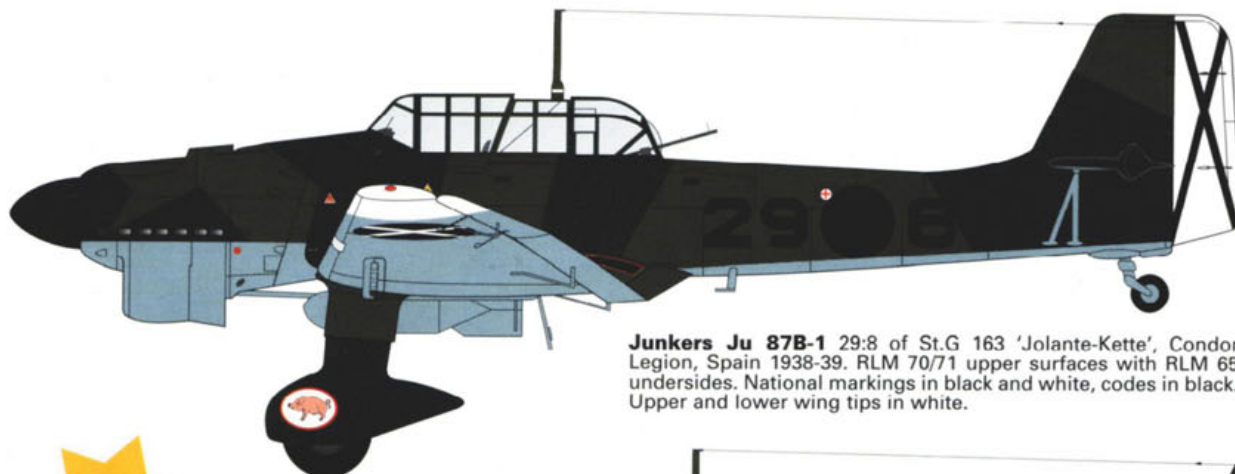
Junkers Ju 87A-1 52+C24 of St.G 165 in 1938. Three colour RLM 61/62/63 upper surfaces with RLM 65 undersides. Codes in black.



Junkers Ju 87A1 NG+RH of unknown StukaSchule. Three colour RLM 61/62/63 upper surfaces with RLM 65 undersides. Codes in black.



Junkers Ju 87A-1 B.6+06 of the Hungarian Air Force. Three colour RLM 61/62/63 upper surfaces with RLM 65 undersides. Yellow fuselage band and lower wingtips. Upper fin and rudder and tailplanes in red, white and bright green. Codes in black.



Junkers Ju 87B-1 29:8 of St.G 163 'Jolante-Kette', Condor Legion, Spain 1938-39. RLM 70/71 upper surfaces with RLM 65 undersides. National markings in black and white, codes in black. Upper and lower wing tips in white.



4./St.G 1 badge is black on a yellow ground.



Junkers Ju 87B-1 6G+HR of 4./St.G 1, France, August 1940. RLM 70/71 upper surfaces with RLM 65 undersides. Yellow star and flash. White 'H' on rear fuselage and band on spinner, other codes in black.



Junkers Ju 87B-2 6G+AD of Gruppe Stab III/St.G 51, France, June 1940. RLM 70/71 on upper surfaces with RLM 65 on undersides. Light coloured codes and spinner may have been in RLM 25 Light Green, the colour allocated to Gruppe Stabs (as shown) or light grey or blue! Note the unfinished unit badge under the cockpit coaming.

invasion of the Soviet Union. Here, the anti-tank capabilities of the Ju 87 were realised to the full and individual pilots were able to build up extremely high scores in the close support role.

AMERICAN INFLUENCE

Early German interest in dive bombers or to use the name *Stukakampflugzeug* which was shortened to *Stuka* for convenience, came from two directions. The Junkers company built their K.47 bomber in Sweden which made its first flight in 1928. This was not an effective aircraft but brought forward ideas generated in World War I about the battlefield use of aircraft by the field commander. Although Germany was restricted in the construction of military aircraft in this period the undercover Luftwaffe took notice of the developments and when the opportunity arose ordered dive bomber designs to be

More than likely taken in the Battle of France this Ju 87B is seen shrouded in the fuselage and engine covers issued to all Stuka formations. They protected the aircraft whilst on primitive airfields and helped camouflage the machine as seen here amongst trees.

constructed and tested in 1933.

The other influence came through General Ernst Udet, a World War I ace whose swash-buckling personality and obvious influence, brought him into contact with governments in other countries especially

Britain and the United States. After a visit to the latter in the early thirties Udet returned full of what he had seen during a demonstration of the Curtiss Helldiver at Cleveland, Ohio.

Under his influence the Reichluftminister -



A large formation of Junkers Ju 87s in 'V' formation, heading into the evening sun for a target. Each is armed with a bomb on the centre line and four smaller weapons under the outer wing panels. The wide white band behind the fuselage Balkenkreuz was generally seen on aircraft in use over the Mediterranean. The camouflage suggests that these aircraft were either operating over North Africa or the Balkans. (IWM)

ium asked for tenders for a dive bomber aircraft to be built for the Luftwaffe and four companies responded. Arado, Blohm & Voss and Heinkel put forward their ideas but it was the more modern monoplane design that was chosen from Junkers.

This had a unique inverted gullwing, heavily spatted undercarriage and twin fins and rudders. Like most aircraft before it, the original Junkers dive bomber was not a pretty aeroplane and although the prototype flew from Dessau for the first time in the late Spring of 1935 fitted with a British 640-hp Rolls-Royce Kestrel engine, it was destroyed in diving trials in the summer of the same year.

It was proved that the cause of the crash was tail flutter and this was eliminated in a second prototype that had a single fin and rudder plus a German Jumo 210A engine of 610-hp. Having won the design competition the aircraft was delivered to the test centre at Rechlin, but before this took place another modification was added. This was the original, crude but effective, form of underwing dive brake which was so successful in making the Ju 87 a stable bombing platform when in the dive and allowed the pilot to accurately line his aircraft up on the target when in a somewhat unnatural attitude.

The bomb load was carried under the centre fuselage and outer wing panels. The fuselage bomb was of up to some 2,000-kgs and in order to enhance its clearance of the forward fuselage when in a near vertical dive, it was mounted on crutches which swung forward before release thus clearing the airscrew and radiator.

Various changes in configuration and engine were fitted on the ten pre-production aircraft built. Armament was a single forward firing, wing-mounted machine gun and another in the rear cockpit were fitted and a broader-bladed propeller enhanced the capabilities of the 680-hp Jumo 210Da engine which became standard. The first production Ju 87A-1s left the production line early in 1937.

These went to 1/St.G162 'Immelmann' which was entrusted with developing the tactics of dive bombing operations. The advent of the Spanish Civil War was heaven sent to the pilots who developed great enthusiasm for the aircraft and a flight of three Ju 87A-1s, called the Jolanthe-Kette, was formed within St.G162 and detached to the Condor Legion where they were used with untold success. Operational tactics were evolved under actual wartime conditions where the Nationalist forces had air superiority over the battlefield and the legend of the Stuka was born,

INTO BATTLE

The Junkers Ju 87 is best remembered by its B variant. This started life in early 1938



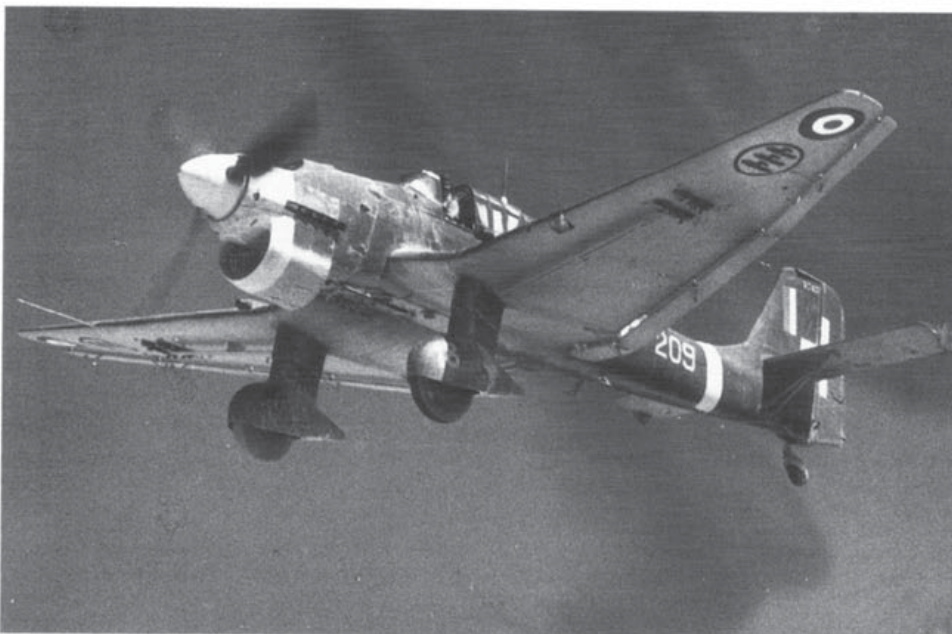
when a standard Ju 87A was fitted with a 1,000-hp Jumo 211A engine and designated the Ju 87V6. An even more modified version, the V7 followed and both featured a redesigned cockpit enclosure, a different tail unit of larger dimensions, a larger radiator under the nose, cleaner styling on the undercarriage streamlining and additional armament in each wing.

The two prototypes heralded the production of the Junkers Ju 87B-1 which replaced the A model in 1938. Ten pre-production aircraft Ju 87B-0s were used for development work before the first B-1 left the Dessau production line in October 1938. The basic B-1 had four sub-variants differing only in alternative radio equipment, provision for a ski undercarriage or armour protection for the crew. By March 1939 the original RLM order for 396 Ju 87B-1s had been increased to 964. A further version, the Ju 87B-1/Trop was issued to Stuka Gruppen

taking part in operations in the Mediterranean.

As the Jumo 211 engine was developed and with greater power becoming available, the B-2, again with four sub-variants, became the standard production machine. Production was increased by the setting up of assembly lines at Berlin-Tempelhof and Bremen-Lemwerder where 395 examples were built before the war and a further 1,168 by the end of 1940.

A version of the Ju 87 that saw little service and was eventually absorbed into the normal Geschwader formations, was the C version which was designed to equip the projected Kriegsmarine aircraft carrier *Graf Zeppelin*. It had folding wings and provision for catapulting plus an arrestor hook. 4 (Stuka)/186 formed at Keil-Holtenau and eventually received several different versions of the aircraft including some of the production C-0s. With the suspension of the



One of four Reggia Aeronautica Junkers Ju 87B-2/Trops that made forced landings in the desert behind British lines. Belonging to 209a Squadriglia the incident happened on 14 September 1941 and each was unofficially adopted by RAF squadrons. This machine, coded '18' is seen (above) at the time of its capture and shortly after it had been given RAF roundels and a fin flash. A captured Ju 87 was actually given a British serial number. Another was eventually handed over to US forces and shipped to America for testing. (IWM)

carrier's construction this unit saw service in Poland and later became a normal dive bomber unit.

The final variant based on the B model airframe was the Ju 87R intended as a long-range anti-shipping aircraft with the addition of extra fuel in the wings and two 300 litre underwing tanks giving it a range of some 876 miles compared to the B's 342 miles.

The first action seen by the Ju 87B was again in Spain as five of the first production B-1s supplemented the three A models already serving there.

But it was in Poland that the Stuka was to live up to its already well-known legend as all seven of the Luftwaffe's, by then, fully equipped Gruppen (St.G1, 2, 51, 76, and 77 plus the operational training unit IV(St.)/Lehrgeschwader 1 and the naval dive bombing staff) took part. They created havoc amongst Polish army units, attacked bridges and other lines of communication and against negligible opposition the accuracy

of their attacks did much to speed the German advance. On the very first day of the campaign Ju 87s were instrumental in allowing an armoured train, with which the Germans were intending to spearhead their advance, to cross the border bridge over the River Vistula by bombing with great accuracy the Polish blockhouses on the other side of the frontier.

Elsewhere the Stukageschwader pinpointed airfields in their initial attacks in order to overcome the Polish air elements. They did this with great success and many of the enemy's fighter and bomber aircraft were destroyed on the ground before they really knew that the invasion of their country had started. Later the Stukas were used to support army units, those of St.G77 for example being used very effectively in support of the German VI Army Corps in attacking Polish cavalry near Weilun which not only decimated the Poles but also hit the brigade headquarters which was in a farmhouse to

the north of the town killing or wounding all of the enemy staff.

Later the same Geschwader's 140 Ju 87s were used to eliminate batteries of heavy artillery in the suburbs of Praga which were holding up the advance on Warsaw itself. By 25 September the main attack on Warsaw had developed and the Stukas, most flying at least three sorties a day, dropped 500 tons of bombs and 72 tons of incendiaries on the Polish fortifications in the city.

During the whole Polish campaign only 31 Junkers Ju 87s were lost in combat.

Part of the psychological pattern of the screaming dive made by the Stuka was a simple siren fitted to the upper part of each undercarriage leg. The demonic howl of a number of these aircraft descending on a target was enough to totally demoralise those defenders who remained and they were particularly effective against civilian targets and refugees on the road.

NORWEGIAN CAMPAIGN

Only one Stukagruppe took part in the invasion of Norway. I./St.G1 operating from Keil and later Stavanger was used though their aircraft appeared everywhere they were needed and in spite of difficult weather conditions experienced in early Spring, were able to effectively attack both troops, communications and shipping targets during the battle.

Early in the campaign Junkers Ju 87s were

used to bomb the airfield near Oslo which was defended to the last by several Norwegian Air Force Gladiators. They also eliminated the forts surrounding Oslo fiord which had caused damage to the German cruiser *Blucher* before moving rapidly northwards to Sola airfield near Stavanger and operated from there for the first few weeks of the campaign in spite of attempts by the Norwegians to block the runways.

Following the arrival of No.263 Squadron with its Gladiators on board *HMS Glorious* the Ju 87s were used together with level bombing to hit the frozen lakes then being used as temporary airfields. The British withdrew and re-established themselves near Narvik at Bardufoss and Bodo. As the French contingent on the Allied side was withdrawn from Aandalsnes and Namsos by sea they were caught by the Stukas who attacked in relays sinking several of the transports and the destroyer *Bison*.

BLITZKREIG IN FRANCE

But the Norwegian campaign turned out to be not much more than a side show for the Stukas as the remainder of the now considerable force of dive bombers were being fitted out for the much larger campaign in France, Belgium and Holland which Hitler launched in May 1940.

Over 300 Ju 87s were available for the attack. Initially the British army advanced into Belgium with no Luftwaffe interference. The Stukas were to be employed elsewhere and in particular against the French where their quick reaction to any organised resistance brought problems for the Allies as their commanders wondered at the speed of

the German advance and the cooperation that had been achieved between the army and air elements in overcoming resistance. French forces were ill-equipped to deal with dive bombers as few anti-aircraft guns were available and the troops were subjected to an increasingly strong and determined attack on their morale through the incessant dive bombing that they had to undergo.

Within two weeks British forces were withdrawing towards Dunkirk and in spite of repeated operations in support of the army, particularly the panzer spearheads, only 14 Ju 87s were lost through Allied action.

It was at this point that the Stuka met its first determined opposition as, ordered to prevent the evacuation of Allied troops, the Stukas attempted to bomb all shipping that approached the French coast to take off beleaguered men. Spitfire and Hurricane squadrons based in England did their best at extreme range to defend the evacuation and it was soon realised that the Stuka was not invulnerable and they became easy meat to RAF fighter pilots when the opportunity arose.

In Belgium it was the Stukas of St.G.1 that bombed the forts at Eben Emael allowing a mere 70 German parachute troops to land and secure the surrender of 1,200 Belgians. Bridges over the Maas were attacked by St.G.77 near the centre of Rotterdam. Their next sorties were against shipping and harbour installations at Antwerp. Further sorties were made in support of German panzer advances towards Liege on 12 May. The Germans crossed the Meuse on 13 May near Sedan with the Stukas bombing artillery positions on the west bank of the river completely demoralising the defenders.

The full fury of Stuka attacks was unleashed as the Allies, mostly British, retreated towards Dunkirk. Fliegerkorps VIII complete with its three Ju 87 units made three mass attacks on the beaches on 1 June followed by more the next day. As well as many smaller ships the destroyers *Basilisk*, *Havant*, *Keith* and the French *Foudroyant* were sunk and two other destroyers and a minesweeper badly damaged.

With the end of British opposition on 5 June, the Stukas quickly moved to the central region of France and completed the decimation of the French army culminating in that country's capitulation.

BATTLE OF BRITAIN

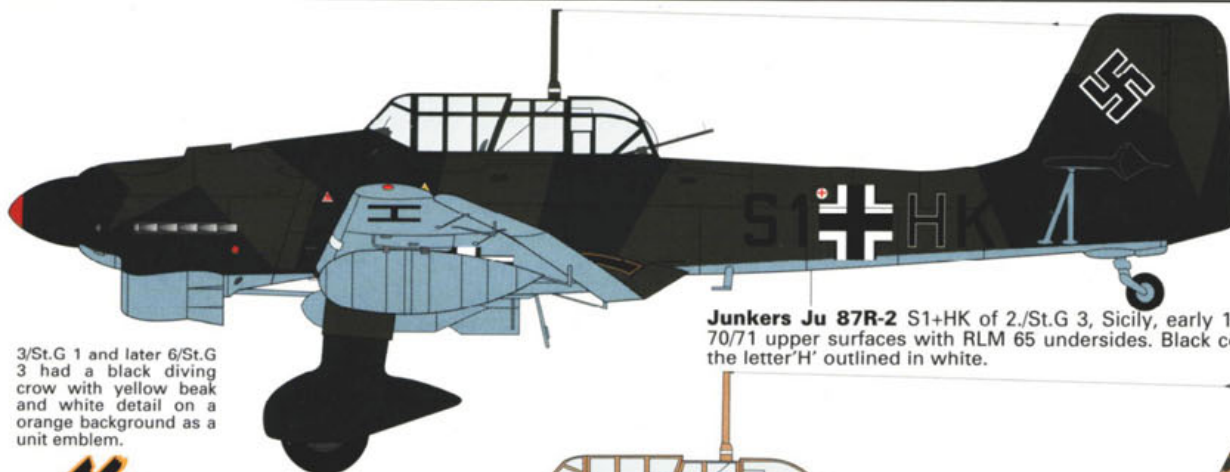
With the Blitzkrieg against France over, the Stuka units re-assembled on the northern French coast and relaxed whilst their political leaders expected the British to sue for peace. When this did not come about plans were put into operation and training begun for Operation Sealion, Hitler's invasion of the British Isles.

The first of many objectives was to clear the English Channel of British shipping and achieve the retreat of Royal Navy ships from ports such as Portsmouth, Dover and Portland in order to leave the sea passage clear for the invasion barges that were being

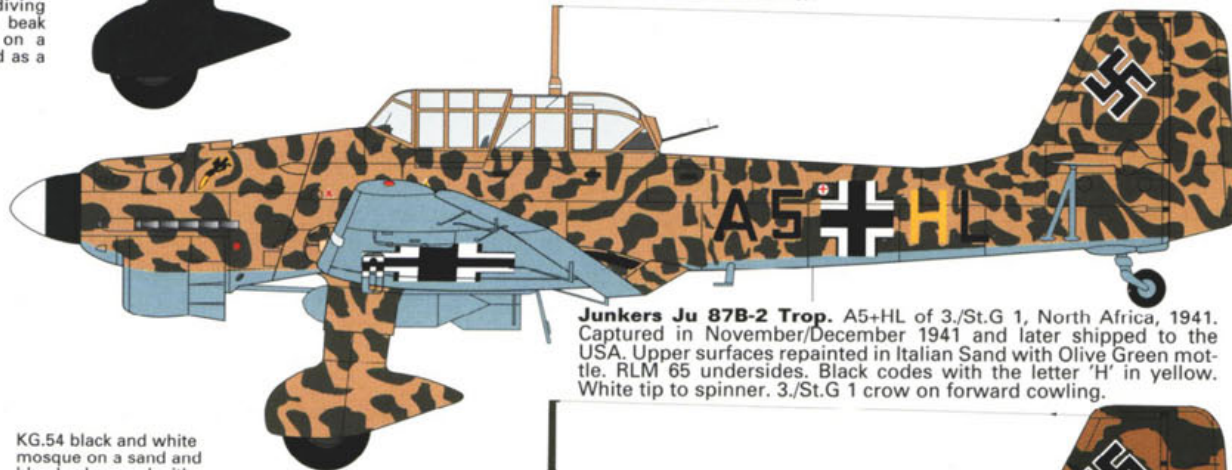
Although this is a good picture of a Junkers Ju 87B-1 no unit insignia can be deciphered. It does however show additional armour plating around the rear gunner's position and the siren used during dive bombing attacks can be seen in motion on the starboard undercarriage leg. A large bomb is stowed under the centre section and four small smaller ones under the outer wing panels. (IWM)



3/St.G 1 and later 6/St.G 3 had a black diving crow with yellow beak and white detail on a orange background as a unit emblem.



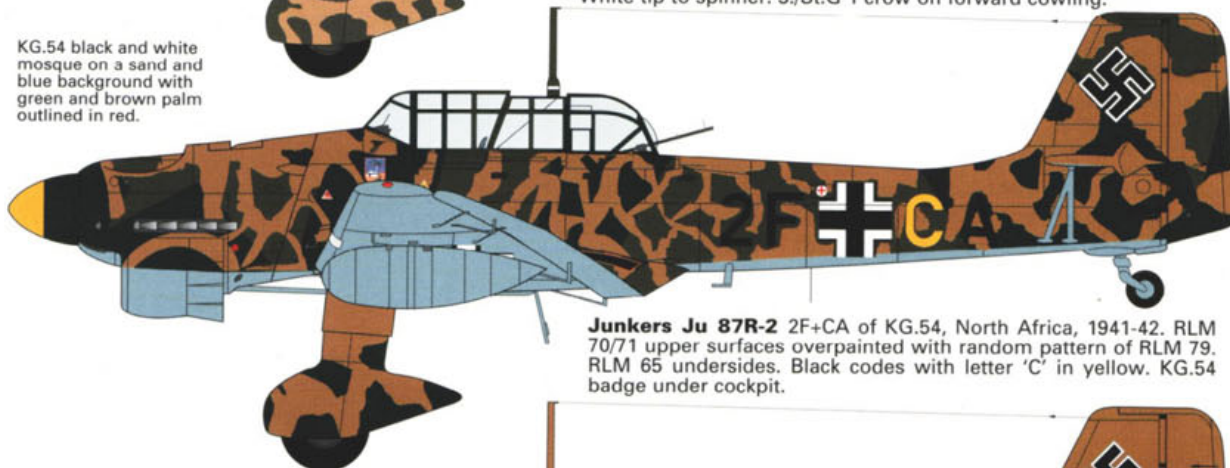
Junkers Ju 87B-2 S1+HK of 2./St.G 3, Sicily, early 1941. RLM 70/71 upper surfaces with RLM 65 undersides. Black codes with the letter 'H' outlined in white.



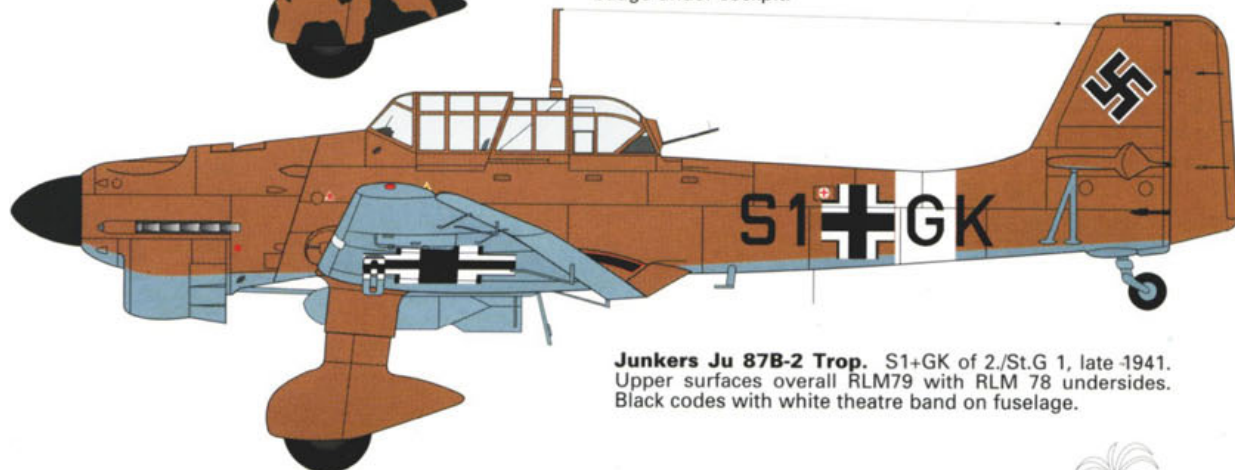
Junkers Ju 87B-2 Trop. A5+HL of 3./St.G 1, North Africa, 1941. Captured in November/December 1941 and later shipped to the USA. Upper surfaces repainted in Italian Sand with Olive Green mottle. RLM 65 undersides. Black codes with the letter 'H' in yellow. White tip to spinner. 3./St.G 1 crow on forward cowl.



KG.54 black and white mosque on a sand and blue background with green and brown palm outlined in red.

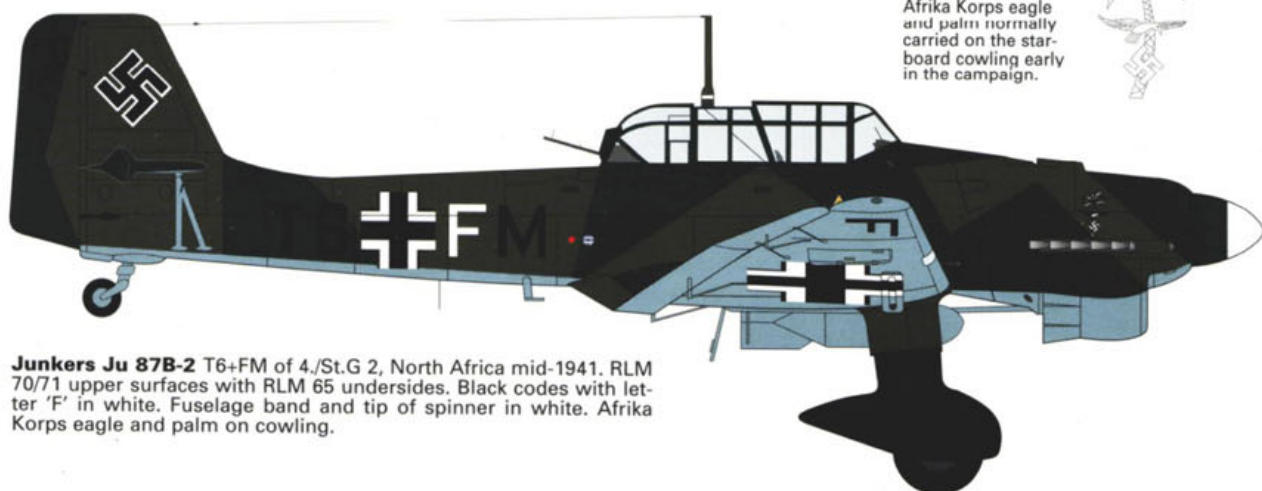


Junkers Ju 87B-2 2F+CA of KG.54, North Africa, 1941-42. RLM 70/71 upper surfaces overpainted with random pattern of RLM 79. RLM 65 undersides. Black codes with letter 'C' in yellow. KG.54 badge under cockpit.



Junkers Ju 87B-2 Trop. S1+GK of 2./St.G 1, late 1941. Upper surfaces overall RLM79 with RLM 78 undersides. Black codes with white theatre band on fuselage.

Afrika Korps eagle and palm normally carried on the star-board cowl early in the campaign.



Junkers Ju 87B-2 T6+FM of 4./St.G 2, North Africa mid-1941. RLM 70/71 upper surfaces with RLM 65 undersides. Black codes with letter 'F' in white. Fuselage band and tip of spinner in white. Afrika Korps eagle and palm on cowl.

Stuka ace Oblt Hans Ulrich Rudel with his Junkers Ju87D and ground crew. The scotty dog within a circle was the unit insignia of 2/St.G2 which he commanded at the time. Rudel was awarded the Knights Cross of the Iron Cross with Golden Oakleaves, Germany's highest military award for bravery. He also became a national hero and survived the war.

assembled in French ports. The second priority was to hit British airfields within range and at the same time knock out aircraft factories and other strategic targets. Finally the Stukas were to support the actual invasion and assist in clearing the way for putting German army units ashore.

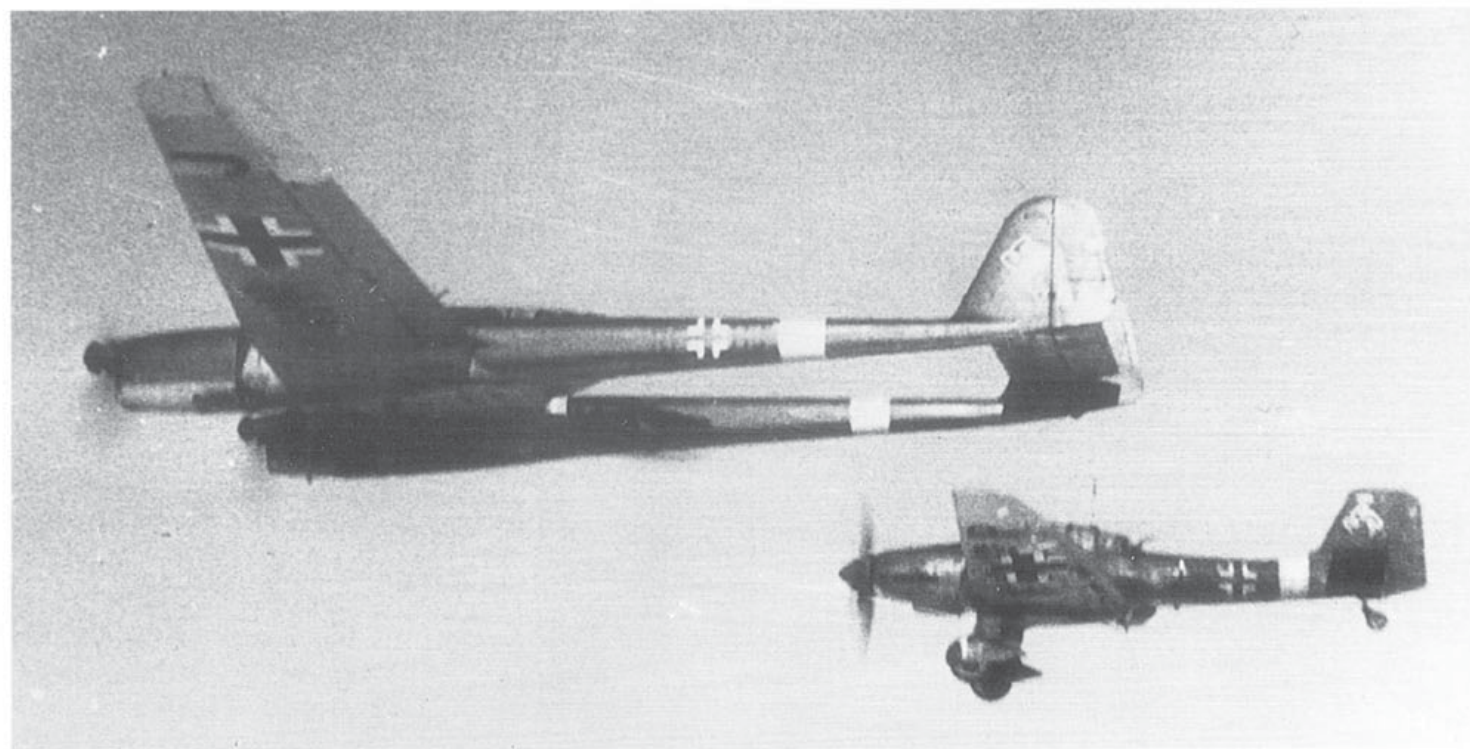
In carrying out these objectives the Stukas were completely successful in the first, did initially well in the second but because the whole operation was abandoned, did not get the opportunity to try out their abilities in the third.

In all three cases the Germans did not realise the strength of the RAF's fighter squadrons and the use that had been put to the radar sites around the coasts. Stuka units were not used to stiff opposition and suffered accordingly.

The Geschwader Gruppe were reorganised and by the opening phases of the attack six Gruppen were ranged along the coast at some seven airfields. These included I/St.G.1, II/St.G.1, III/St.G.1 at Angers/St.Pol, I/St.G.2, II/St.G.2, III/St.G.2 at St. Malo, Lannion and St.Trond, I/St.G.3 at Dinand/Pleurtuit, St.G.51 (base not known) I/St.G.77, II/St.G.77, III/St.G.77 in the Caen area and finally IV(Stuka)LG.1 at Tramecourt.

The first attacks were made in early July against British Channel convoys with the priority targets being the escort ships. The attacks were more often than not successful and the destroyers *Brazen*, *Codrington*,

It is sometimes forgotten that the Junkers Ju 87 was used for reconnaissance purposes as well as bombing. This probably explains why this Ju 87D is seen in company with a Focke Wulf Fw 189A. No unit insignia can be seen on either aircraft though the photograph was probably taken somewhere on the Russian front.

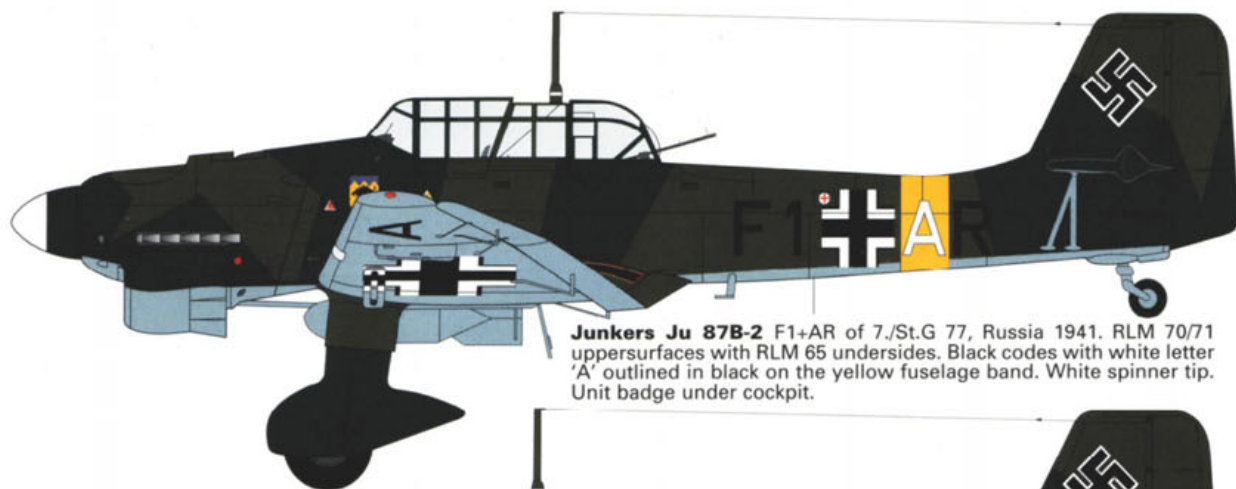




7./St.G 77 unit badge had a black head with red and yellow detail on a blue and yellow shield



III./St.G 2 unit badge had white outlined shield bearing a white cross on a blue background with red and white detail.



Junkers Ju 87B-2 F1+AR of 7./St.G 77, Russia 1941. RLM 70/71 uppersurfaces with RLM 65 undersides. Black codes with white letter 'A' outlined in black on the yellow fuselage band. White spinner tip. Unit badge under cockpit.



Junkers Ju 87B-2 T6+AD of Stab. III./St.G 2 during 1943. RLM 70/71 on uppersurfaces with RLM 65 undersides. Yellow fuselage band and under wing tips. Black codes with letter 'A' and spinner tip in RLM 24.

Delight and *Wren* were sunk and others damaged. The British gave up using Dover as a base but retained Portsmouth and Portland. It was therefore up to the Stukas to attack these bases and 27 Ju 87s of St.G.77 were sent to Portland on 9 July where they were to hit the port installations and a convoy that had recently arrived. Spitfires from Warmwell intercepted the raid but met strong opposition from the six Bf 110 fighters that were acting as escort. Honours were about even as St.G.77 lost one Ju 87, but badly damaged the 7,085 ton coastal

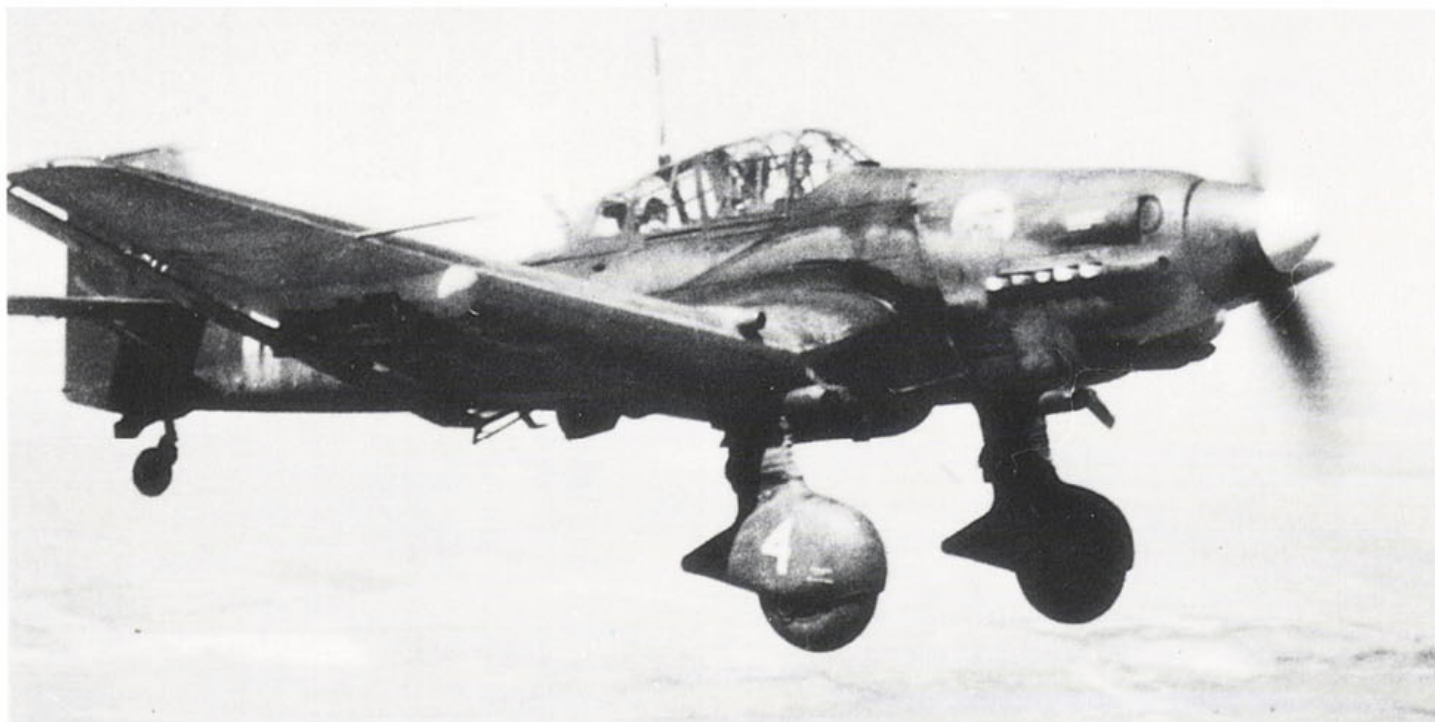
freighter *Empire Daffodil*.

Attacks on convoys continued with the British losses being heavy in both escort ships and merchantmen. On 11 July St.G.2 and St.G.77 both launched raids against Portland badly damaging two ships but losing two of their own aircraft. On 21 July a convoy of 20 ships to the south of the Isle of Wight came under attack and again two ships were sunk. 24 and 25 July saw the attack switch to Dover where five coasters were hit and two of the last active destroyers of the 1st Flotilla badly damaged.

Emphasis on targets changed on 12 August when the Stuka Geschwader were called upon to hit airfield targets at Eastchurch, Detling, Thorney Island, Middle Wallop and Benson. On the 13th Warmwell was attacked

Whether this Junkers Ju 87D was shot down or just had an accident it seems to have been written off on the vast steppes of the Russian plain. The undercarriage has been wiped off and so has the wooden three-bladed propeller. The aircraft may have belonged to St.G2 but it is difficult to see much of the unit badge which is badly worn as are the fuselage codes.





A standard Junkers Ju 87D-4 over the Russian front where most of these aircraft were used. Others were in wide spread use in the Mediterranean. The aircraft has its individual identity painted on the outer side of each undercarriage leg. The siren is still fitted on this late mark of the Stuka, this one having it on the port undercarriage leg. (IWM)

and on the 15th Hawkinge and Lympne were damaged in dive bombing raids. The Stukas were back on the 16th with raids on Tangmere, Gosport, Lee-on-Solent and the radar station at Ventnor, the latter being particularly successful.

Losses were mounting but the worse day was on 18 August when Biggin Hill, Ford, Thorney Island and the Poling radar station were the targets. Whilst forming up for the attack on the radar station the formations were caught by Hurricanes and Spitfires of Nos. 43, 152, 601 and 602 Squadrons and 16 Ju 87s were shot down.

With the RAF getting better at breaking through the fighter escorts and the losses mounting ever higher it was at this point that it was decided to withdraw the Stuka Geschwader and save them for the actual invasion itself. Fortunately these plans did not come to fruition.

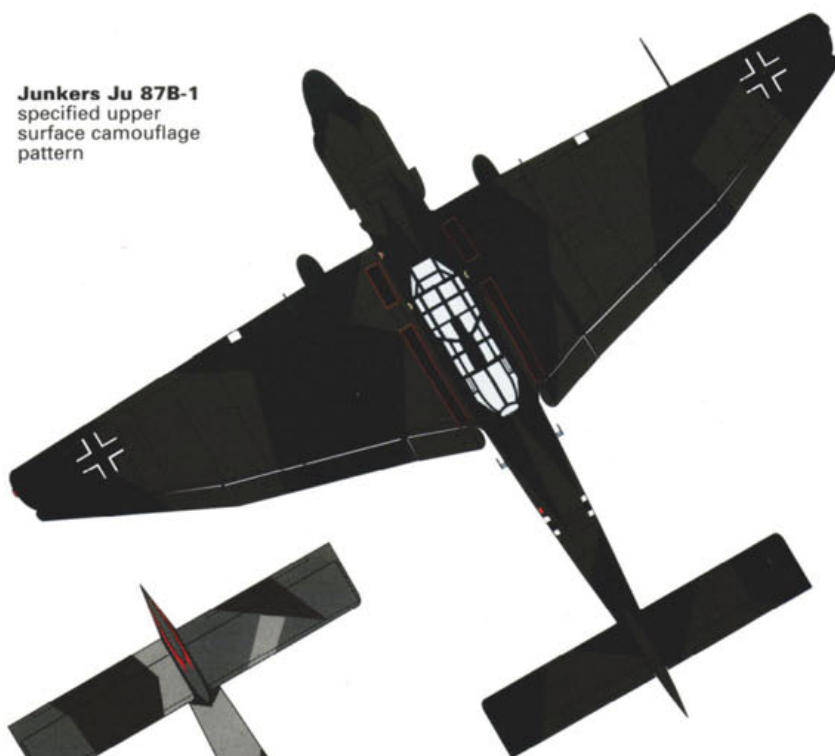
By early September only three Stuka units were left in northern France with St.G.3 available for anti-shipping strikes. It is recorded that on 7 September that only 142 Junkers Ju 87s remained serviceable out of the 316 available at the start of the battle.

THE MEDITERRANEAN

The Stuka Geschwader were withdrawn to bases in Germany and re-equipped with the later versions of the Ju 87, the B-2, and when new aircrew and aircraft had arrived they returned to operational status this time in the Mediterranean where they were able to return to their traditional role of supporting the army in the field.

Initially Stukas were sent to reinforce the Italian attacks on the island of Malta. Operating from Trapani in Sicily 43 aircraft of I./St.G.1, I./St.G.2 and Stab/St.G.3 attacked

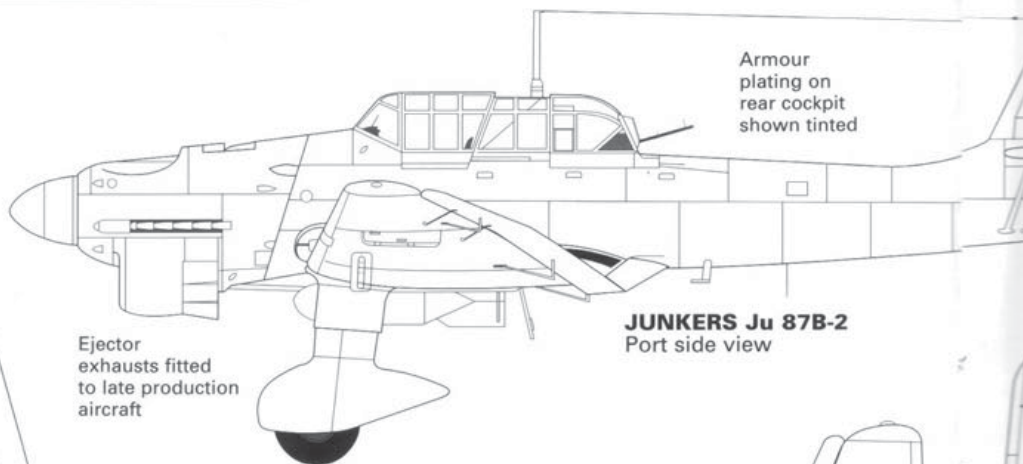
Junkers Ju 87B-1
specified upper
surface camouflage
pattern



Junkers Ju 87A-1
specified upper surface
camouflage pattern



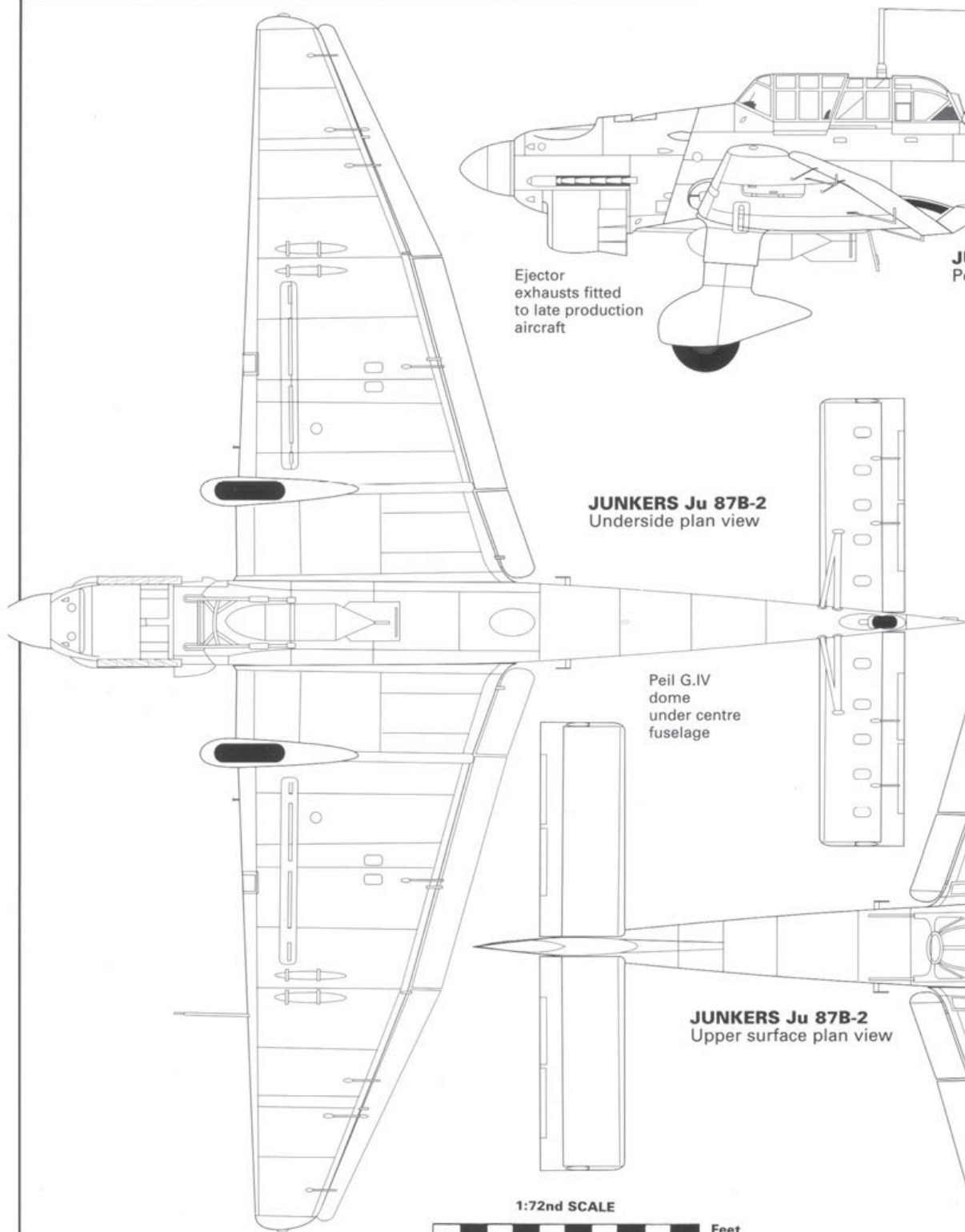
Armour
plating on
rear cockpit
shown tinted



JUNKERS Ju 87B-2
Port side view

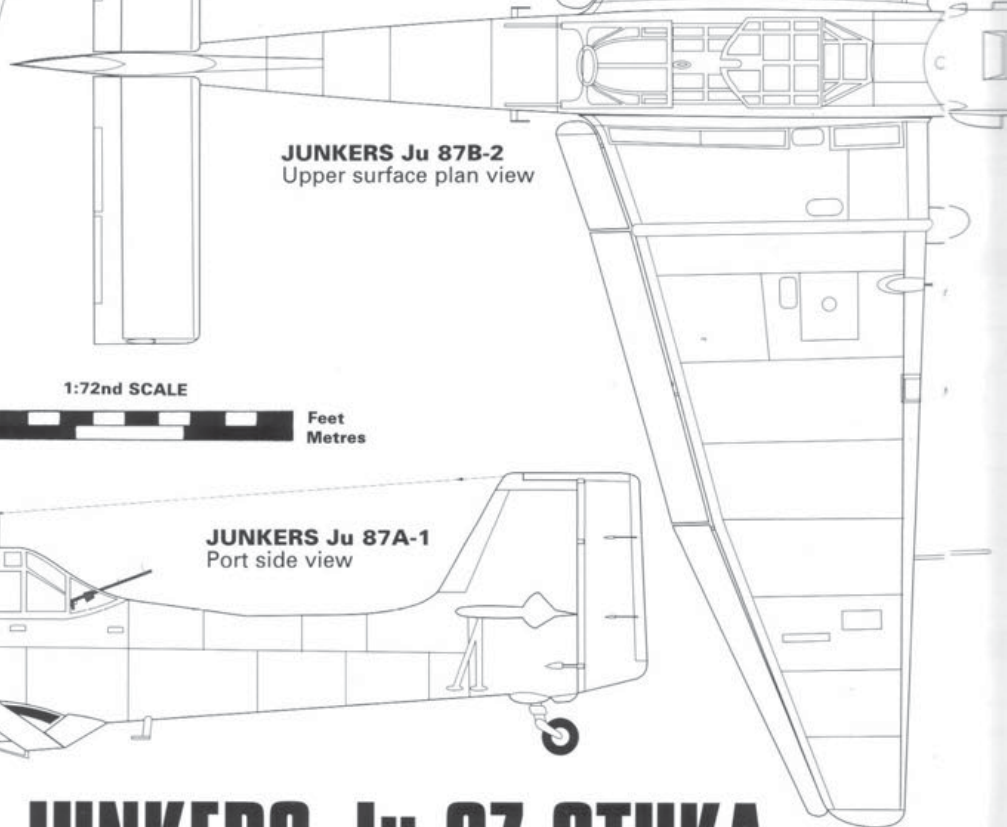
Ejector
exhausts fitted
to late production
aircraft

JUNKERS Ju 87B-2
Underside plan view

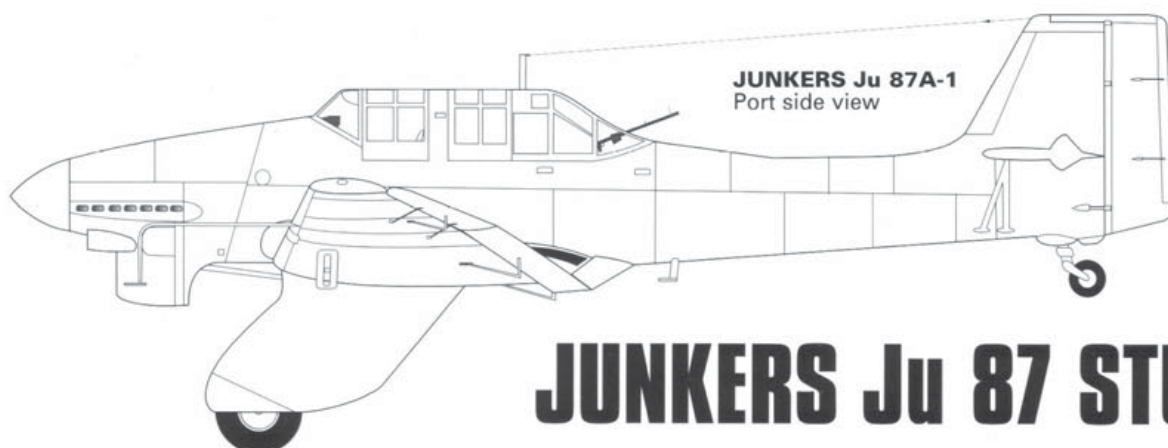


Peil G.IV
dome
under centre
fuselage

JUNKERS Ju 87B-2
Upper surface plan view

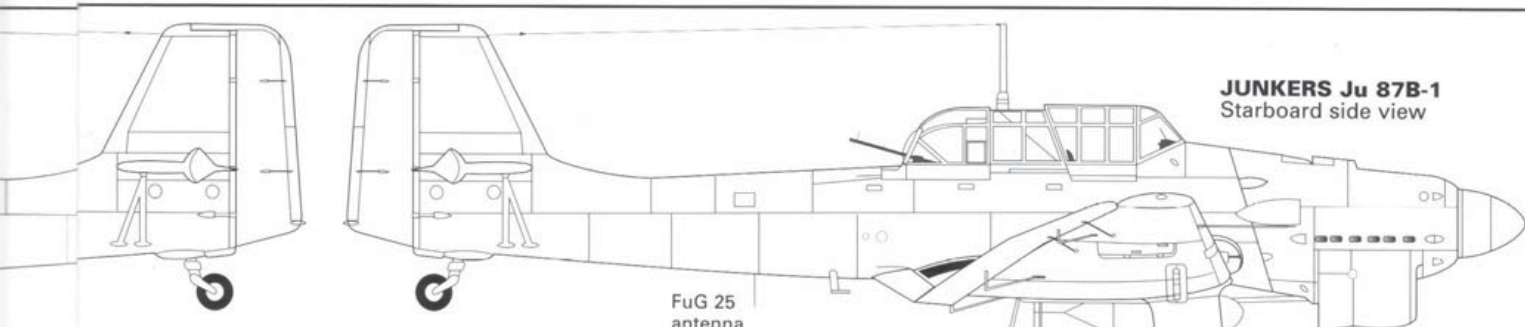


1:72nd SCALE



JUNKERS Ju 87A-1
Port side view

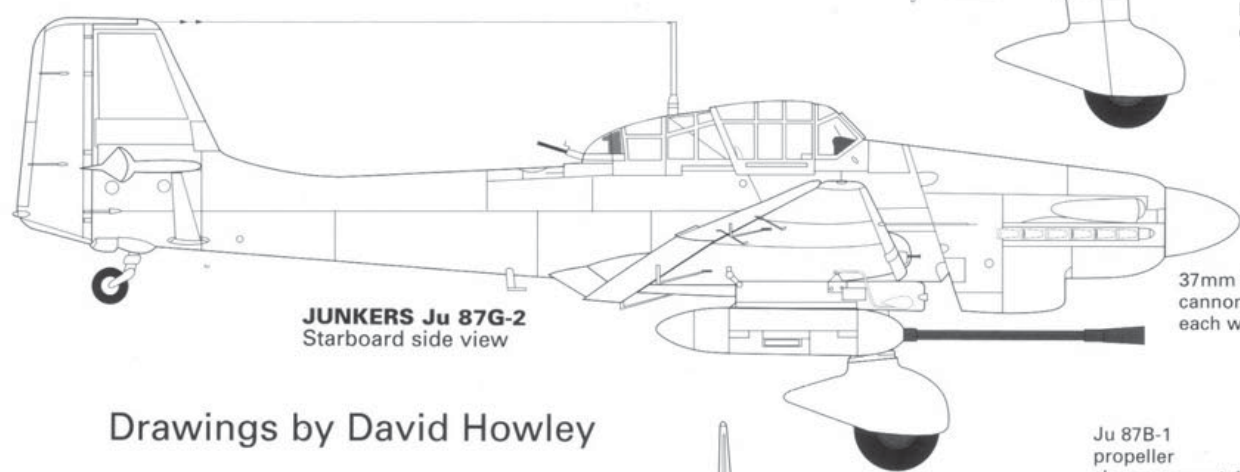
JUNKERS Ju 87 STUKA



JUNKERS Ju 87B-1
Starboard side view

FuG 25
antenna

Initial production
exhausts.

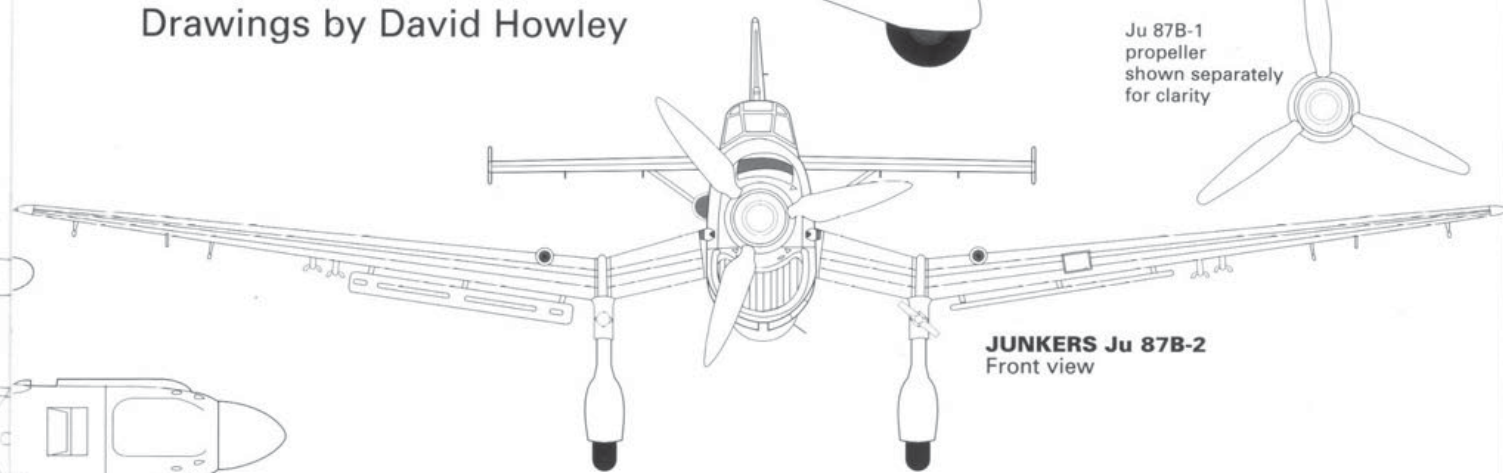
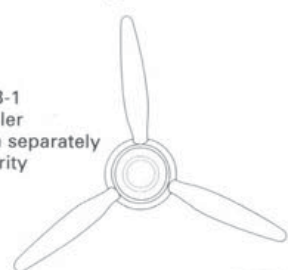


JUNKERS Ju 87G-2
Starboard side view

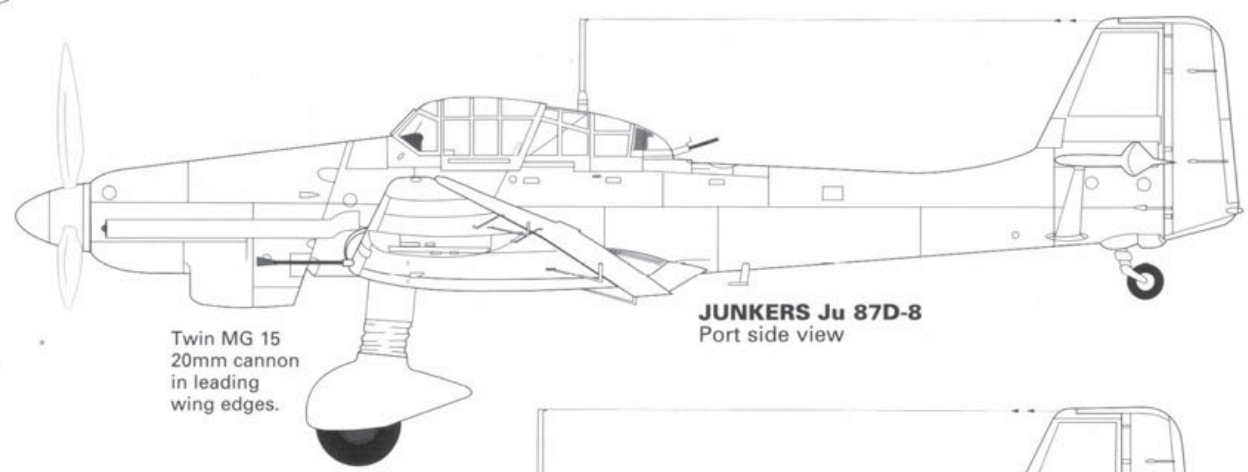
37mm Flak 18
cannon under
each wing.

Drawings by David Howley

Ju 87B-1
propeller
shown separately
for clarity

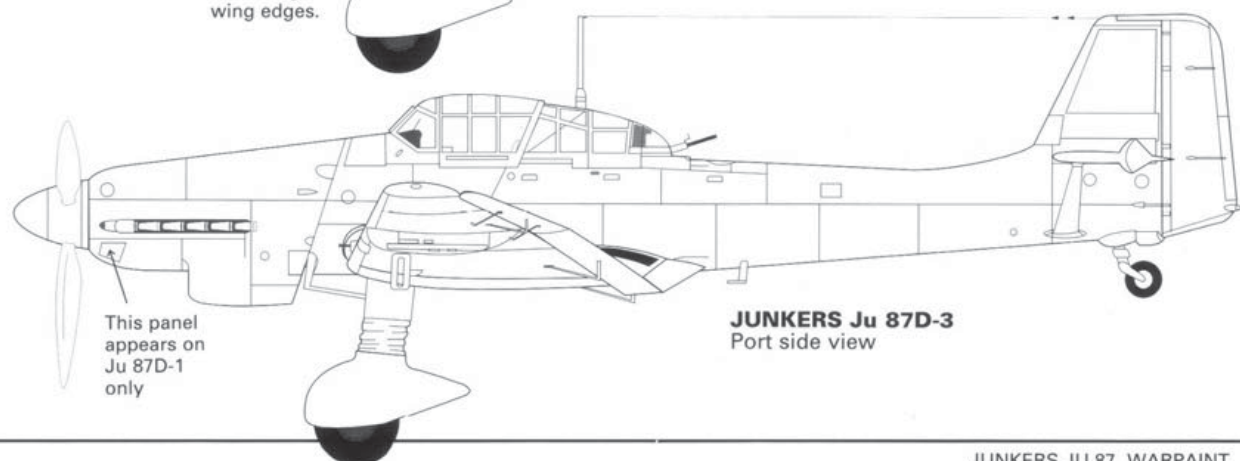


JUNKERS Ju 87B-2
Front view



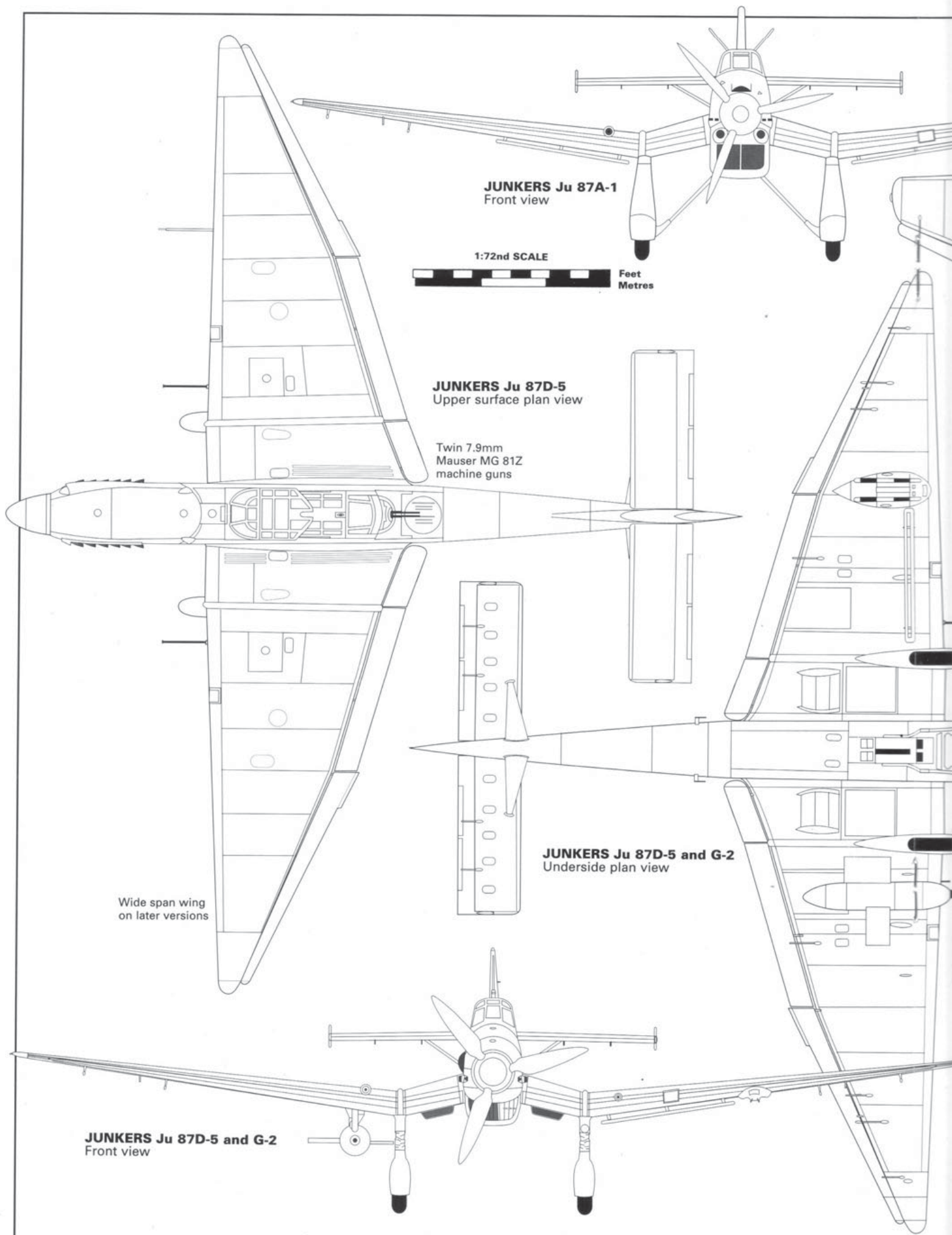
JUNKERS Ju 87D-8
Port side view

Twin MG 15
20mm cannon
in leading
wing edges.



JUNKERS Ju 87D-3
Port side view

This panel
appears on
Ju 87D-1
only



JUNKERS Ju 87A-1
Front view

1:72nd SCALE

Feet
Metres

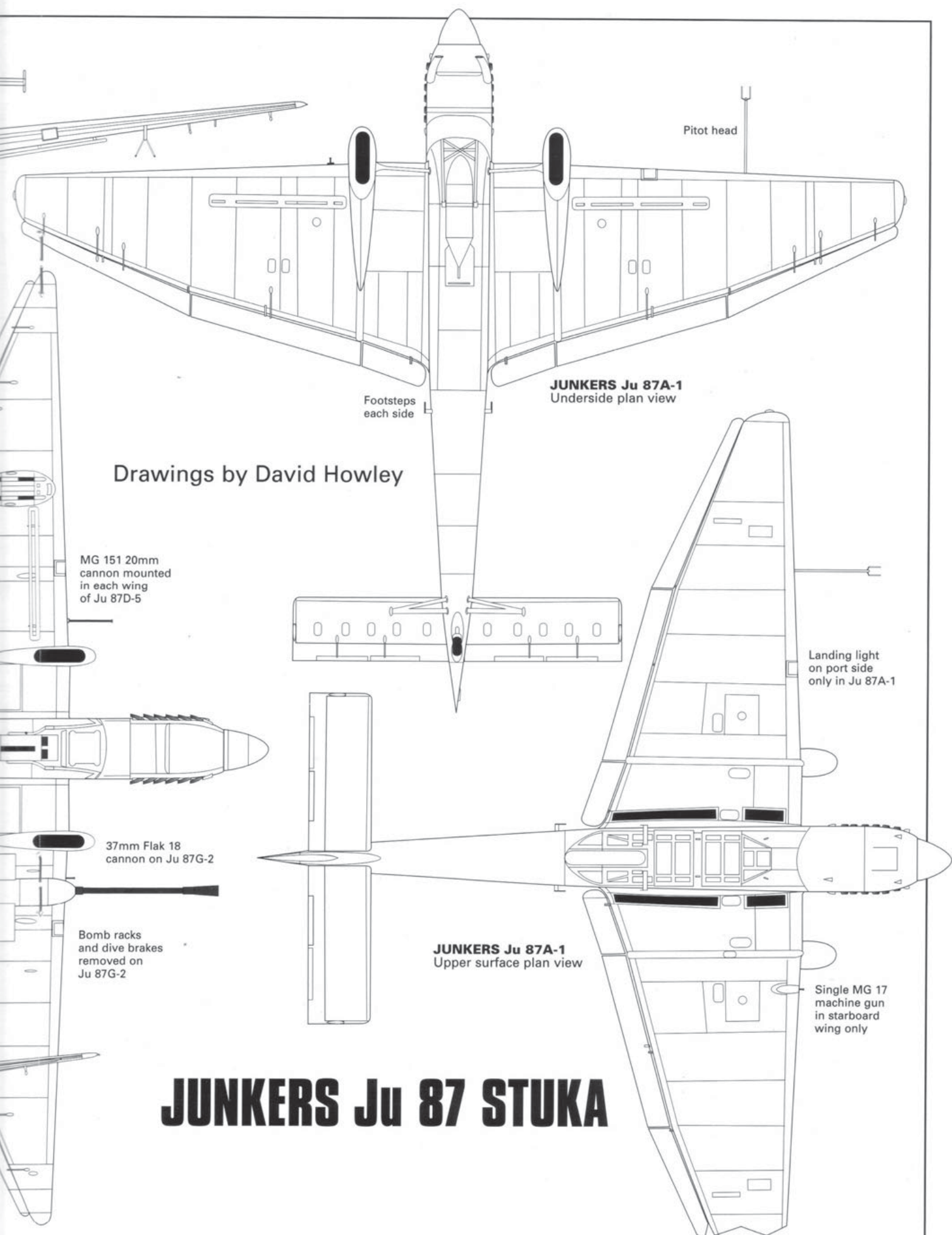
JUNKERS Ju 87D-5
Upper surface plan view

Twin 7.9mm
Mauser MG 81Z
machine guns

Wide span wing
on later versions

JUNKERS Ju 87D-5 and G-2
Underside plan view

JUNKERS Ju 87D-5 and G-2
Front view



JUNKERS Ju 87 STUKA



One of the development aircraft of the Junkers Ju 87G-1 tank buster version. This was fitted with two 37-mm Bord Kannone having distinctive six foot long barrels. Each had six rounds per gun loaded by trays into the right hand side of the weapon. The machine guns in the wings were not installed neither were dive brakes under the wings.

one of the Malta convoys all but sinking the aircraft carrier *HMS Illustrious* and the cruiser *Southampton* which did sink before reaching safety after sustaining two direct hits with 500-kg bombs.

Hitler had meanwhile decided that the stalemate that had developed between the Italian forces and the Greek defenders called for some stronger action. He therefore planned an attack on the Balkan countries to secure his right flank before dealing with the

Soviet Union by invading Greece through the backdoor, namely Yugoslavia.

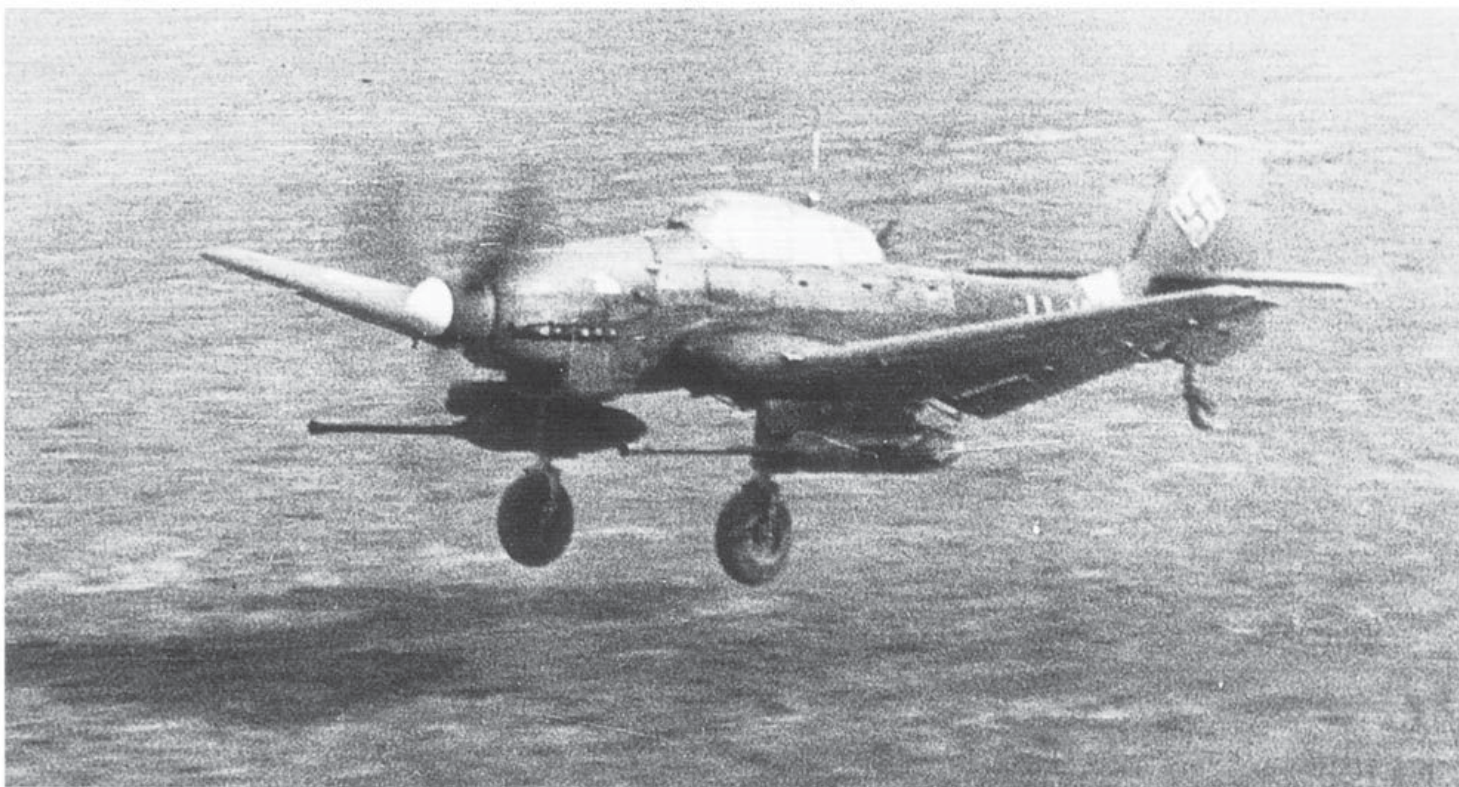
The attack started on 6 April and two Stuka Geschwader were moved from their home bases to Romania where they were within easy reach of Belgrade. Some 600 aircraft were deployed within ten days from the date of the executive orders being issued by Luftflotte 4 based in Vienna. Fliegerkorps VIII under von Richthofen was responsible for the 120 Junkers Ju 87s that were initially involved.

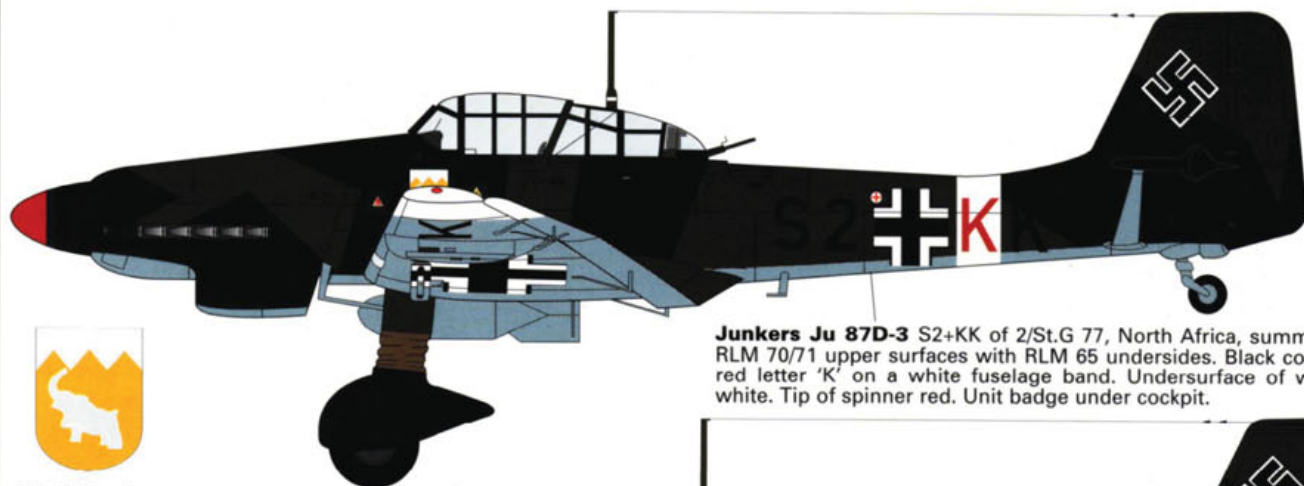
The speed with which the Germans advanced through Yugoslavia caught the defenders completely by surprise and much of the work of subduing heavily defended positions was left to the Stukas whilst the mass of panzer armour circumvented these positions. Once again the Stuka pilots were

flying at least three sorties a day. The Yugoslavs did not have much in the way of motor transport and long columns of troops on foot with equipment carried by horse and cart were attractive targets caught, as they often were, in the narrow valleys of this mountainous country.

In Greece it was much the same story. The Germans had reached the Monastir Gap by 23 April. Ju 87s of St.G.77 reported that they

Many Junkers Ju 87s operating on the Russian front had the lower half of the undercarriage spats removed to avoid clogging in the muddy ground of primitive airfields. This Ju 87D-1 has the distinctive tank marking on the cowling thought to have been one of Rudel's ideas for Panzerjagd kommando Weiss.

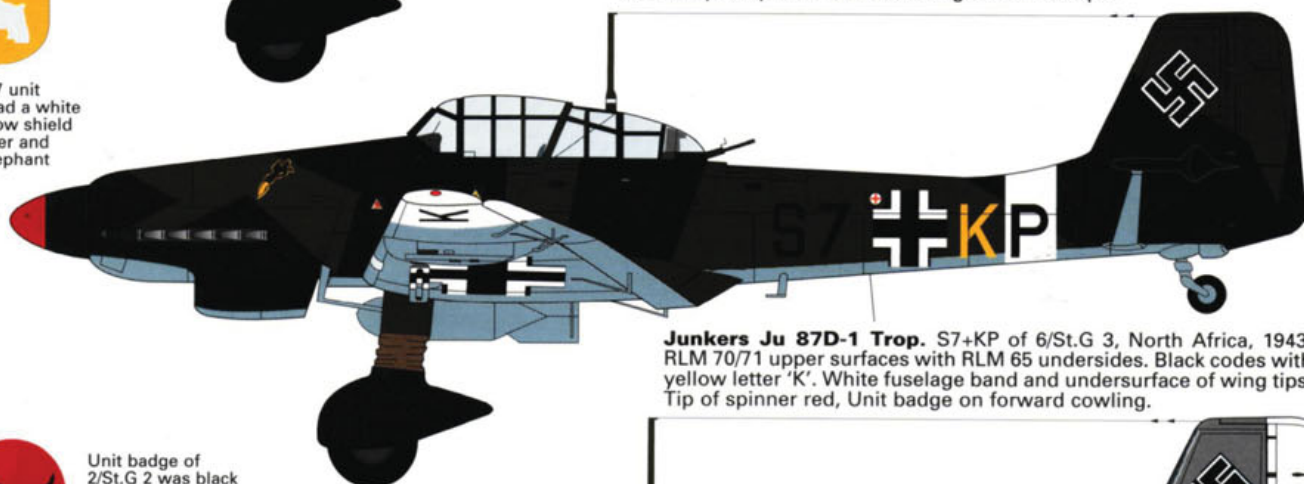




Junkers Ju 87D-3 S2+KK of 2/St.G 77, North Africa, summer 1941. RLM 70/71 upper surfaces with RLM 65 undersides. Black codes with red letter 'K' on a white fuselage band. Undersurface of wing tips white. Tip of spinner red. Unit badge under cockpit.



2/St.G 77 unit badge had a white and yellow shield with silver and white elephant



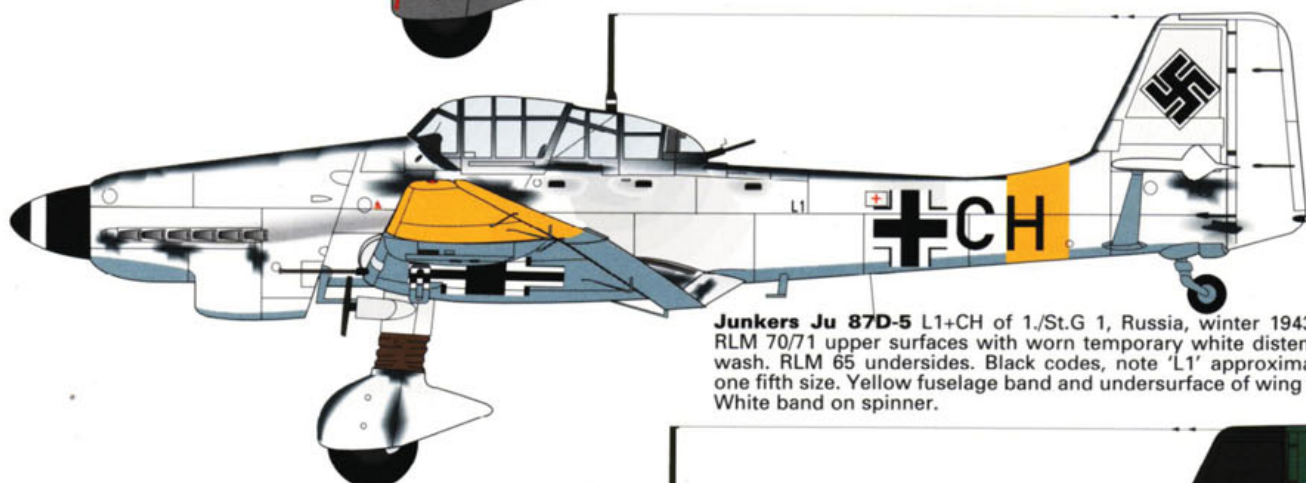
Junkers Ju 87D-1 Trop. S7+KP of 6/St.G 3, North Africa, 1943. RLM 70/71 upper surfaces with RLM 65 undersides. Black codes with yellow letter 'K'. White fuselage band and undersurface of wing tips. Tip of spinner red, Unit badge on forward cowl.



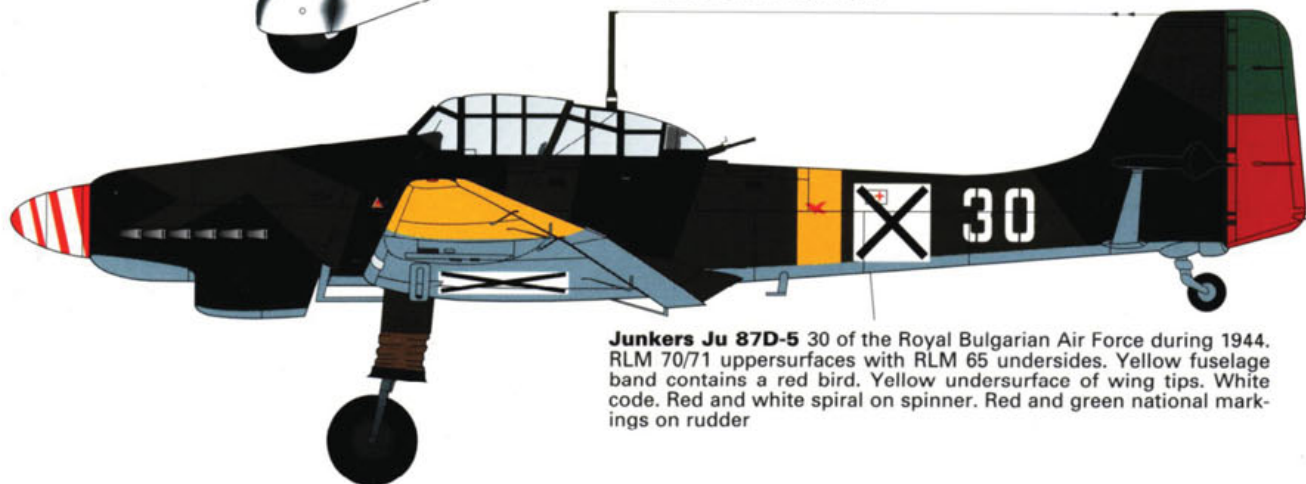
Unit badge of 2/St.G 2 was black Scottie dog on a white, outlined red, circle.



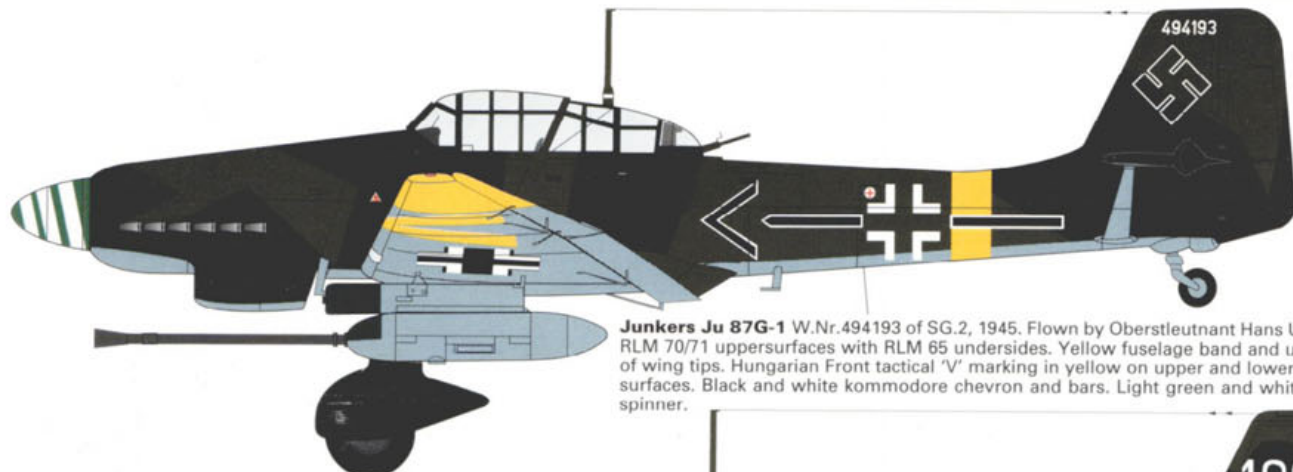
Junkers JU 87D-3 T6+HK of 2/St.G 2, Russia, winter 1943-44. RLM 70/71 upper surfaces with worn temporary white distemper wash. Note 'newer' application on the rudder. RLM 65 undersides. Black codes with red letter 'H' on a yellow fuselage band. Undersurface of wing tips yellow. Tip of spinner red. Unit badge on forward cowl.



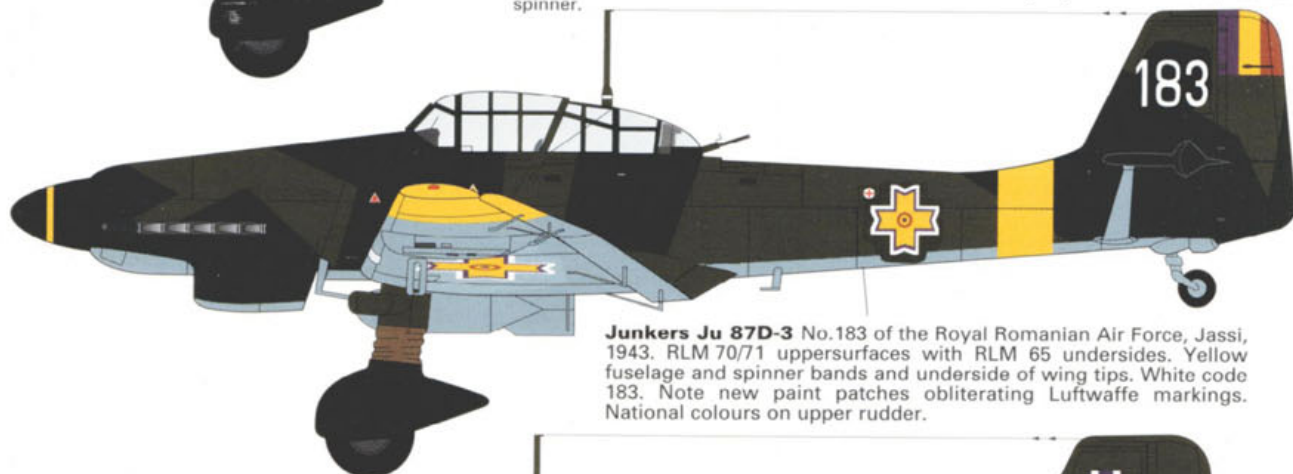
Junkers Ju 87D-5 L1+CH of 1./St.G 1, Russia, winter 1943-44. RLM 70/71 upper surfaces with worn temporary white distemper wash. RLM 65 undersides. Black codes, note 'L1' approximately one fifth size. Yellow fuselage band and undersurface of wing tips. White band on spinner.



Junkers Ju 87D-5 30 of the Royal Bulgarian Air Force during 1944. RLM 70/71 upper surfaces with RLM 65 undersides. Yellow fuselage band contains a red bird. Yellow undersurface of wing tips. White code. Red and white spiral on spinner. Red and green national markings on rudder



Junkers Ju 87G-1 W.Nr.494193 of SG.2, 1945. Flown by Oberstleutnant Hans Ulrich Rudel. RLM 70/71 uppersurfaces with RLM 65 undersides. Yellow fuselage band and underside of wing tips. Hungarian Front tactical 'V' marking in yellow on upper and lower wing surfaces. Black and white kommodore chevron and bars. Light green and white spirals on spinner.



Junkers Ju 87D-3 No.183 of the Royal Romanian Air Force, Jassi, 1943. RLM 70/71 uppersurfaces with RLM 65 undersides. Yellow fuselage and spinner bands and underside of wing tips. White code 183. Note new paint patches obliterating Luftwaffe markings. National colours on upper rudder.



Junkers Ju 87D-1 OK- AC of the Slovak Air Force. RLM 70/71 upper surfaces with RLM 65 undersides. White registration letters.

Selection of Stuka Gruppen badges

had established a new base at an airstrip near Athens on 25 May in spite of the fact that the British had landed some 58,000 men including one armoured brigade to try and halt the German spearheads. Many of these troops minus their equipment were evacuated to Crete where the Germans saw their opportunities and followed up their overwhelming Balkans campaign by invading the island and others in the Aegean Sea.

Operation Mercury was the brainchild of Generaloberst Student who was the C-in-C of Fliegerkorps I consisting of parachute and airborne troops. The invasion turned out to be an almost entirely Luftwaffe affair as it was soon seen that because of the Royal Navy in strength in the area, a seaborne landing was out of the question.

The Stukas were to be used in their prime role of long range artillery where they had air superiority over the battlefield. They also had a new weapon - a 50-kg fragmentation bomb which detonated 30 cms above the ground that could cut down troops in the open who were not in well built revetments.

Bombing missions against British positions, in particular anti-aircraft gun sites, built up for several days before the actual



IV(Stuka)/LG.1



5/St.G 1



7/St.G 1



Gesch.Stab/St.G 2
Immelmann



3/St.G 2
Immelmann



6/St.G 2
Immelmann



8/St.G 2



9/St.G 2



Grup. Stab 1/St.G 77



Stab III/St.G 77



5/St.G 77



10/St.G 77

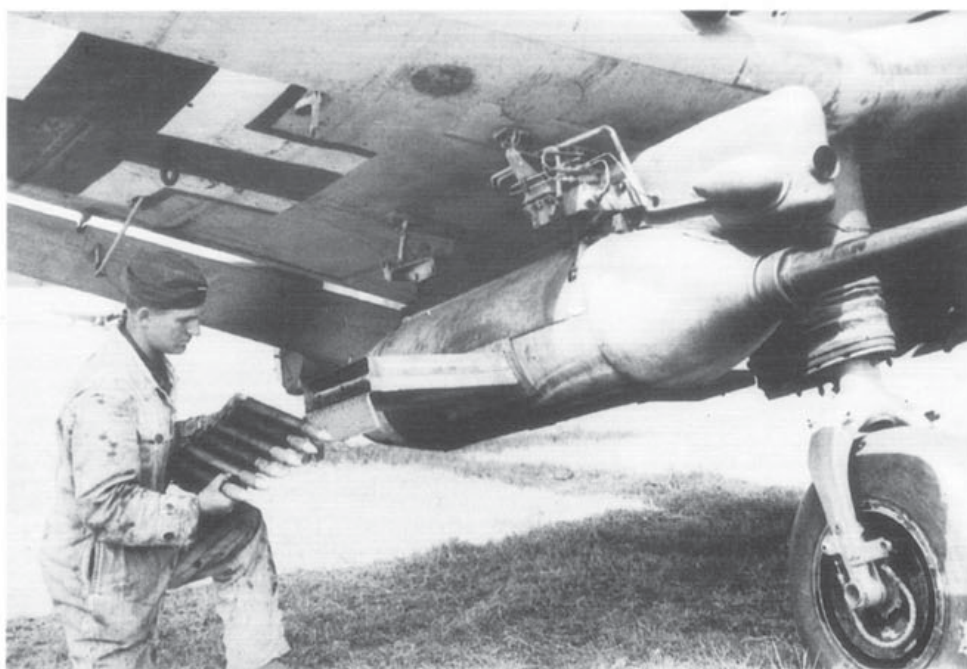
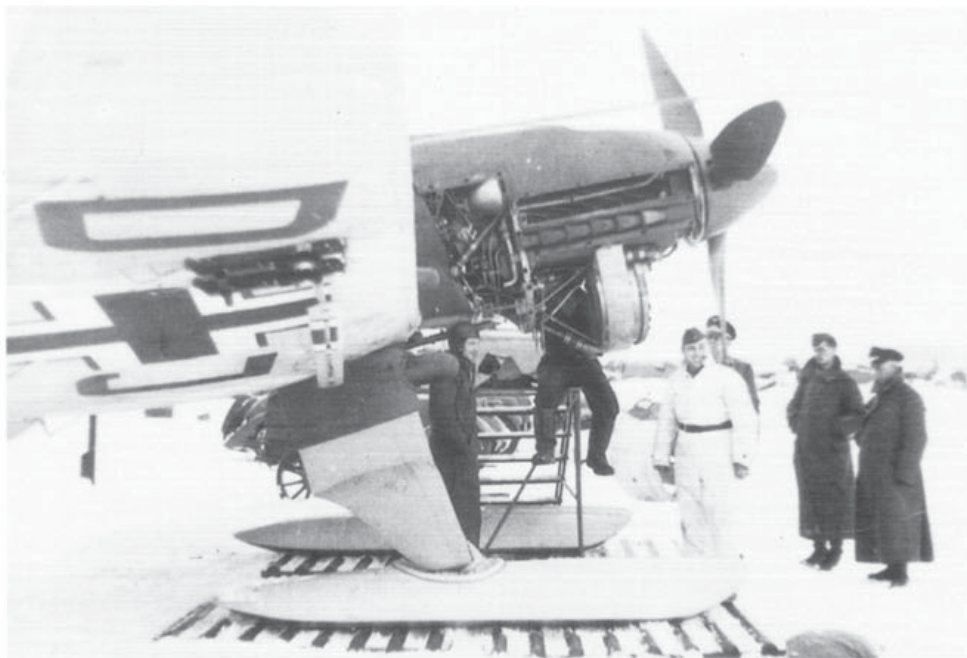
The Junkers Ju 87B/U4 was modified to have a ski undercarriage for operations on the Russian front. It is not known how many were converted but the shape and weight of the attachments would have made the carriage of an adequate bomb load rather difficult. (Bundesarchiv)

parachute and airborne landings on 20 May. The British had taken up strong defensive positions but were pinned down by the incessant attacks by Ju 87s which allowed the lightly armed German troops to consolidate their gains and in spite of heavy losses won the day. *HMS Gloucester*, *HMS Orion*, several destroyers and troops transports were sunk by other units of Ju 87s.

At about the same time the Germans were building up their strength in the north African desert. The Afrikakorps found that the Ju 87 was an ideal weapon for the type of mobile warfare that was taking place. Ju 87s were instrumental in subduing Free French resistance at Bir Hakim in June 1941 and were significant in the second battle of Tobruk when the German forces advanced as far as El Alamein and the Nile Delta.

It was at this time that Italian Air Force squadriglia were reinforced with Junkers Ju 87B-2s. They used them well but in a never to be forgotten incident several from 209a Squadriglia ran out of fuel during a mission on 14 September 1941 and in the forced landing made in the desert fell into RAF hands where at least four were claimed as general duties aircraft by various squadrons and even given RAF serial numbers.

Right: An armourer working on a Junkers Ju 87G-1 shows the clip of six 37 mm shells, each weighing three pounds, which were fitted with an explosive warhead and designed to penetrate the armour of a tank especially when attacked from the rear. The two guns fitted to this variant were adaptations of the Flak 18. Below: A fire damaged Junkers Ju 87D-5 seen on Celle airfield at the closing stages of the war and photographed by occupation forces. Not many Stukas were used in the West and this one must have been an exception as it escaped from the advancing Russians and was surrendered to American troops. (IWM)





The only surviving Junkers Ju 87D is that held by the RAF Museum, Hendon. Its W.Nr. was 494085 though the markings seen here are more than likely not similar to the original colouring. The Russian front yellow fuselage band has been retained. The aircraft is now kept in the Battle of Britain museum representing the Ju 87s that took part in attacks over England during the summer of 1940. (M.G.Young)

NEW VARIANTS

The Junkers Ju 87 had always been a short-range aircraft which in some of the campaigns, particularly the Battle of Britain, worked to their disadvantage. The Ju 87R overcame some of these by having underwing tanks but the aircraft's speed also caused concern. An extensive redesign centred around the Jumo 211J engine was initiated at Dessau and two prototypes designated Ju 87V21 and V22 were produced which had an entirely different nose with a smaller radiator, the removal of the oil cooler from on top of the nose to underneath, the extra range of the R variant as standard, a new cockpit canopy with twin instead of a single machine gun for rearward defence and more extensive armour plating. The first flight of the prototype was made in February 1941 and there followed two more pre-production aircraft including one built specifically for tropical trials.

During tests it was also decided to increase the aircraft's wing span and before the first of the D variants, as the new model was designated, flew, this modification was incorporated. It was also at this time that the Ju 87 was considered for straight forward ground attack work and on the D-5 no air brakes were fitted. A version for night attack with large flame damped exhausts and the Jumo 211P engine of 1,500-hp was introduced which also had two 20-mm cannon in the wings replacing the machine guns.

The Ju 87D began to replace the B version in Geschwader service at the end of 1941. Production was also stepped up and 917 were built during 1942. Production was further increased to 1,844 in 1943 and 1,012 in 1944 before the final Ju 87 left the production lines.

OPERATION BARBAROSSA

Hitler's peace pact with Stalin and the sub-

sequent division of Poland was intended on the German's part as no more than a holding operation before the final clash in which the two political dogmas of National Socialism and Communism met head on.

Hitler was making advanced plans for this even shortly after the take-over of Poland and advanced airfields were constructed along the new frontier under the *Ostbauprogramm* as early as October 1940. Initially these were used for training aircraft but as aircraft and troops became available after their withdrawal from Greece, Crete, France and the Low Countries they took over these airfields in preparation for Operation Barbarossa, the invasion of the Soviet Union.

At 0300 hrs on 22 June 1941 the first tanks, infantry and aircraft crossed the border and the following few weeks saw the near

JUNKERS JU 87 KITS AND DECALS

Compiled By David Hannant. Correct to January 1996

INJECTION MOULDED KITS

Scale	Variant	Manufacturer	Identification	Remarks
1:72	Junkers Ju 87B-2	Airfix	A 02049	Early kit
1:48	Junkers Ju 87B-2/R	Airfix	A 05100	
1:72	Junkers Ju 87R/R	Fujimi	FI125013	
1:72	Junkers Ju 87D-1	Fujimi	FU25014	
1:72	Junkers Ju 87G-1	Fujimi	FU25015	
1:72	Junkers Ju 87D-5/8	Fujimi	FU25016	'White Milk' colour scheme
1:72	Junkers Ju 87G-2	Fujimi	FU25017	
1:72	Junkers Ju 87B	Fujimi	FU35133	Shark mouth decal
1:48	Junkers Ju 87B-2	Hasegawa	HAJT013	
1:48	Junkers Ju 87R-2	Hasegawa	HAJT015	Flown by Richard Zwei
1:48	Junkers Ju 87B-2	Hasegawa	HAJT016	Desert camouflage
1:48	Junkers Ju 87B-2	Hasegawa	HAJT111	Fitted with skis
1:48	Junkers Ju 87R-2	Hasegawa	HAJT114	Desert snake decal
1:72	Junkers Ju 87G	Hobbycraft	HC1241	
1:48	Junkers Ju 87D	Hobbycraft	HC1515	
1:72	Junkers Ju 87B-1	Heller	HEO388	
1:24	Junkers Ju 87B	Heller	HEO498	
1:48	Junkers Ju 87B-2/R-2	Heller	HEO541	HiTech kit
1:72	Junkers Ju 87B	Italeri	IT045	
1:72	Junkers Ju 87D-5	Italeri	IT070	
1:48	Junkers Ju 87	Lindberg	LI70508	
1:48	Junkers Ju 87G-1	Monogram	MG4011	
1:72	Junkers Ju 87A-1	MPM	MPM72010	
1:72	Junkers Ju 87G-1/D-3	Matchbox	PK111	
1:144	Junkers Ju 87B	Revell	RV4047	
1:72	Junkers Ju 87G-2	Revell	RV4153	
1:32	Junkers Ju 87B	Revell	RV4796	

PHOTO ETCHED ACCESSORIES

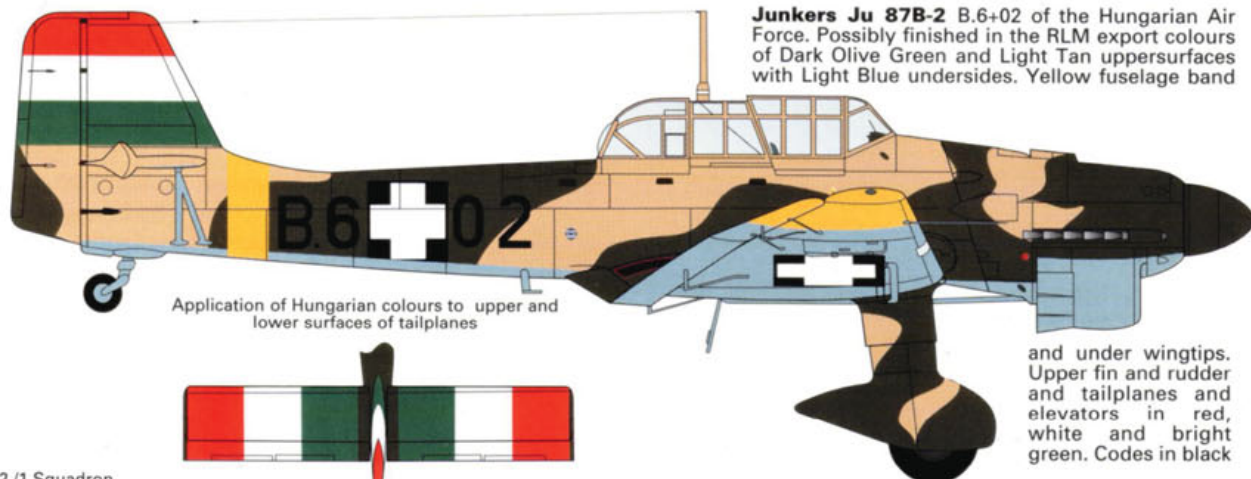
1:72	Junkers Ju 87B	Airwaves	AEC72038	Interior detail set
1:72	Junkers Ju 87D/G	Airwaves	AEC72128	Interior detail set
1:72	Junkers Ju 87	Airwaves	AEC72047	Metal wheels
1:72	Junkers Ju 87	DB Resins	DB55	Metal wheels
1:48	Junkers Ju 87B	Eduard	ED48129	Interior detail set
1:72	Junkers Ju 87B/R	Eduard	ED72133	Detail set
1:48	Junkers Ju 87	Reheat	RH098	Interior detail set
1:48	Junkers Ju 87	Reheat	RH099	Exterior detail set
1:48	Junkers Ju 87	True Details	TD48050	
1:48	Junkers Ju 87D/G	True Details	TD48057	

RESIN PARTS

1:48	Junkers Ju 87B-2	Aires Hobby Models	AIRE4801	
1:48	Junkers Ju 87B-2	Aires Hobby Models	AIRE4802	
1:72	Junkers Ju 87A	Hi-Tech	HIT006	Conversion parts
1:72	Junkers Ju 87A	Hi-Tech	HIT105	Conversion parts

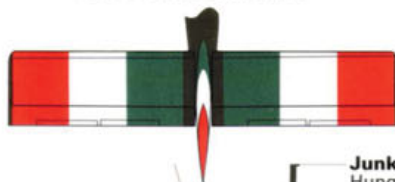
DECALS

1:48	Junkers Ju 87B/R	Almark Decals	AKA4807	Markings for Afrikakorps staffels
1:72	Junkers Ju 87B	Almark Decals	AKC04	Battle of Britain markings plus Bf 110
1:72	Junkers Ju 87B/R	Almark Decals	AKC07	Miscellaneous units
1:72	Junkers Ju 87B/R	Almark Decals	AKC08	Various Afrikakorps markings
1:48	Junkers Ju 87D	Aeromaster	AMD48140	Air Forces other than Luftwaffe
1:48	Junkers Ju 87	Aeromaster	AMD48141	Miscellaneous Luftwaffe units
1:48	Junkers Ju 87B	Min of Small A/c Prod	MZ4842	Miscellaneous Luftwaffe markings
1:32	Junkers Ju 87B	Superscale	SS32017	Miscellaneous Luftwaffe markings
1:32	Junkers Ju 87B	Superscale	SS32018	Miscellaneous Luftwaffe markings
1:48	Junkers Ju 87G-1/D-1	Superscale	SS48441	Similar to above
1:48	Junkers Ju 87B-2	Superscale	SS48443	
1:48	Junkers Ju 87B Trop	Superscale	SS48444	
1:72	Junkers Ju 87G-1/D-2	Superscale	SS72653	
1:72	Junkers Ju 87G-2/D-3	Superscale	SS72654	
1:72	Junkers Ju 87B-2	Superscale	SS72655	
1:72	Junkers Ju 87	Superscale	SS72656	Tropical markings
1:48	Junkers Ju 87	Three Guys Replica	TGR48005	



Junkers Ju 87B-2 B.6+02 of the Hungarian Air Force. Possibly finished in the RLM export colours of Dark Olive Green and Light Tan uppersurfaces with Light Blue undersides. Yellow fuselage band

Application of Hungarian colours to upper and lower surfaces of tailplanes

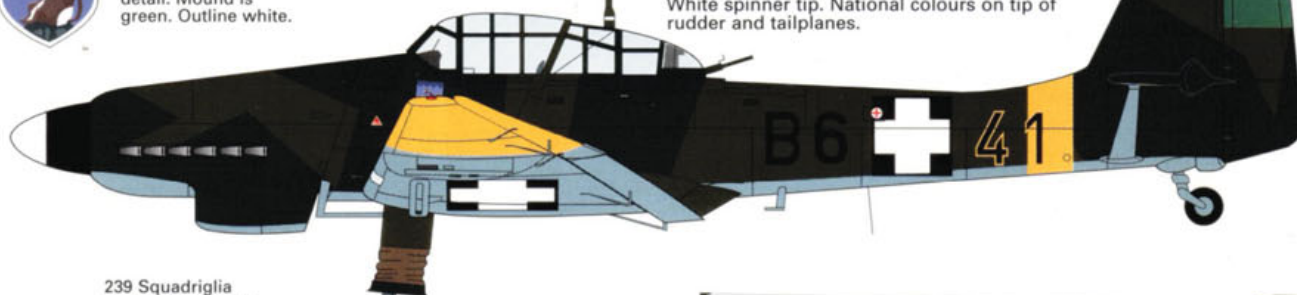


and under wingtips. Upper fin and rudder and tailplanes and elevators in red, white and bright green. Codes in black

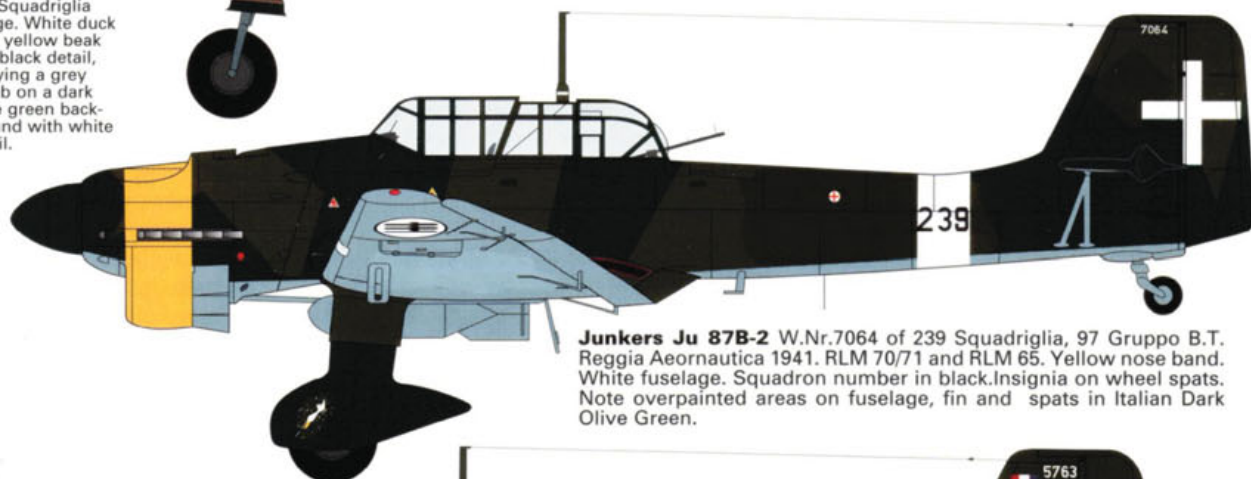


102/1 Squadron shield dark and light blue with ape in several shades of brown with white and black detail. Mound is green. Outline white.

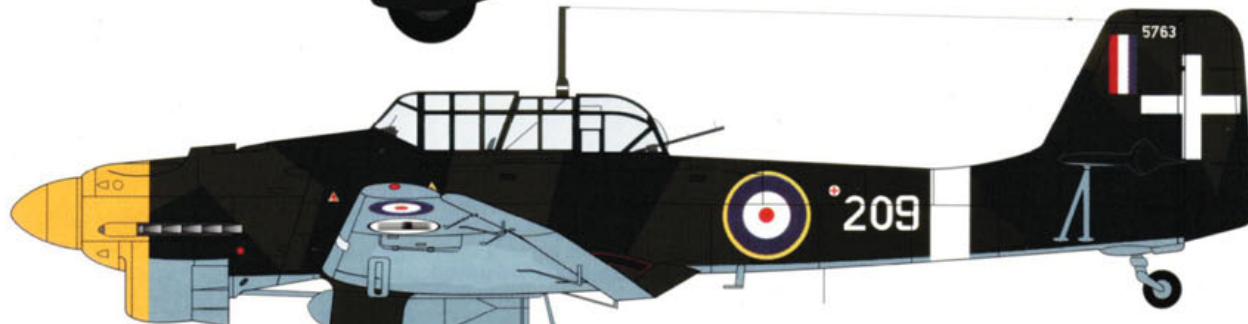
Junkers Ju 87D-5 B.6+41 of 102/1 Squadron Hungarian Air Force 1943-44. RLM 70/71 and RLM 65. Yellow fuselage band and under wing tips. Black codes with figure '4' outlined in yellow. White spinner tip. National colours on tip of rudder and tailplanes.



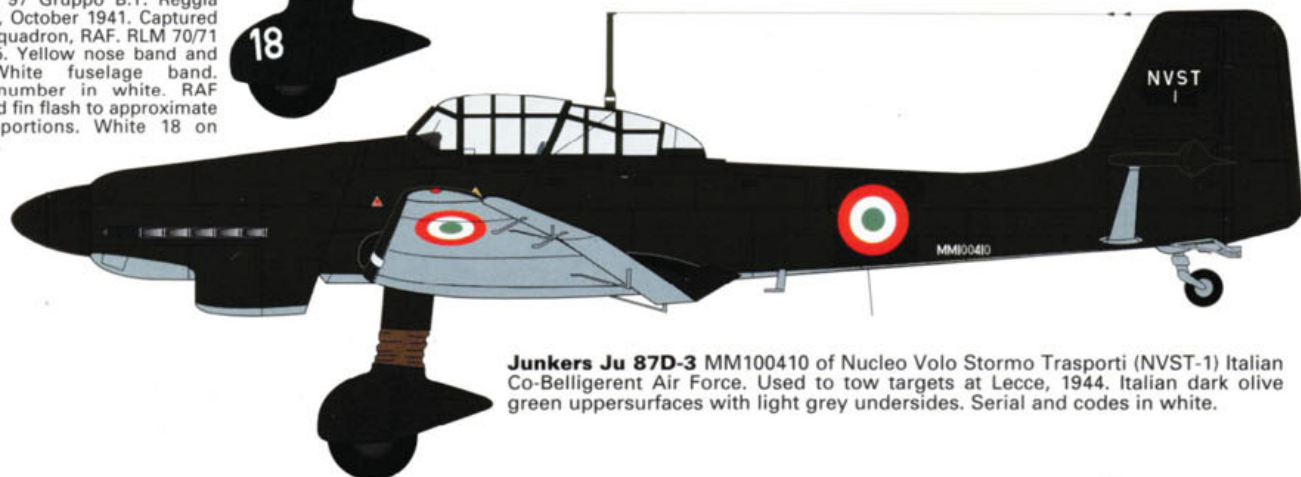
239 Squadriglia badge. White duck with yellow beak and black detail, carrying a grey bomb on a dark olive green background with white detail.



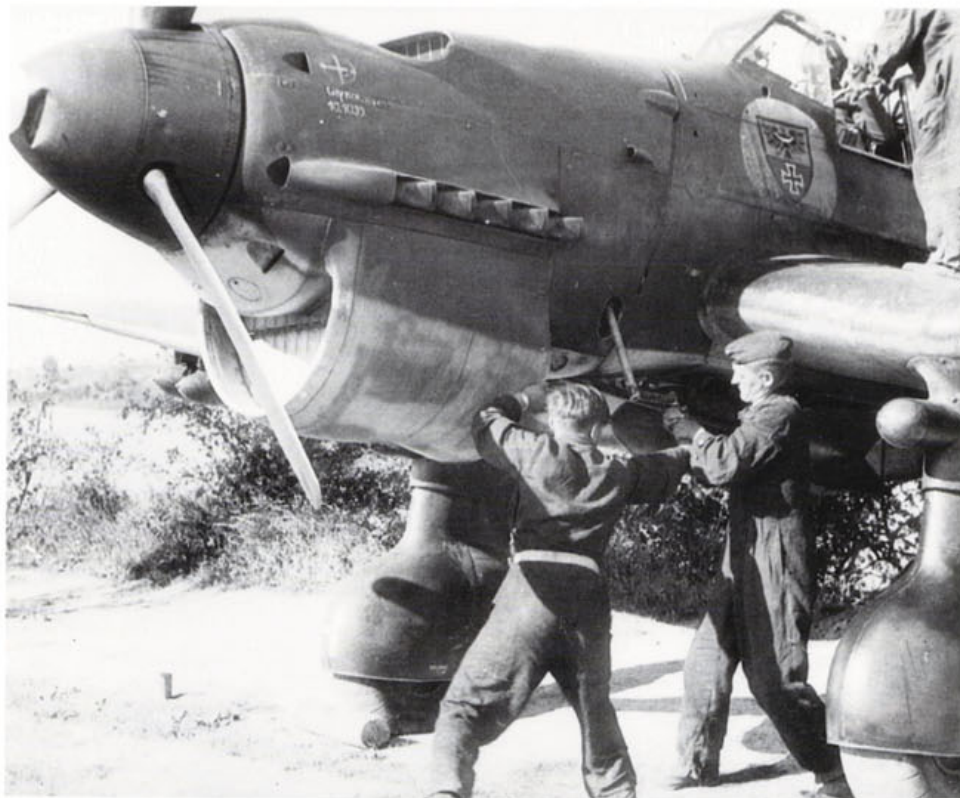
Junkers Ju 87B-2 W.Nr.7064 of 239 Squadriglia, 97 Gruppo B.T. Reggia Aeronautica 1941. RLM 70/71 and RLM 65. Yellow nose band. White fuselage. Squadron number in black. Insignia on wheel spats. Note overpainted areas on fuselage, fin and spats in Italian Dark Olive Green.



Junkers Ju 87B-2 W.Nr. 5763 of 209 Squadriglia, 97 Gruppo B.T. Reggia Aeronautica, October 1941. Captured by No. 73 Squadron, RAF. RLM 70/71 and RLM 65. Yellow nose band and spinner. White fuselage band. Squadron number in white. RAF roundels and fin flash to approximate correct proportions. White 18 on wheel spats.



Junkers Ju 87D-3 MM100410 of Nucleo Volo Stormo Trasporti (NVST-1) Italian Co-Belligerent Air Force. Used to tow targets at Lecce, 1944. Italian dark olive green uppersurfaces with light grey undersides. Serial and codes in white.



Preparing to hand crank a Junkers Ju 87B of 3./St.G 2 Immelmann at St. Malo during the Battle of Britain. Hand cranking on Ju 87s was a two-man job. Note that this aircraft had a badly bent spinner and very rudimentary wheel chocks. (Bundesarchiv)

destruction of the Soviet land and air forces. In the air the bulk of these kills was achieved by Luftflotte 2 commanded by Kesselring.

With 1,811 Soviet aircraft destroyed it proved to be the greatest air victory in terms of numbers that had ever been fought. German losses during the same period were a mere 35 aircraft of all types.

The speed at which the panzers advanced meant that the Stukageschwader had to keep up and in the traditions that they had built up over the previous two years they found

themselves on primitive landing grounds close to the front line where their devastating power was used to the full. Stuka aircrew were given no rest and, unlike Allied aircrew, did not do a tour of duty involving so many operations before they were rested. In the operations over Russia crews doubled their daily sortie rate to six a day, day after day.

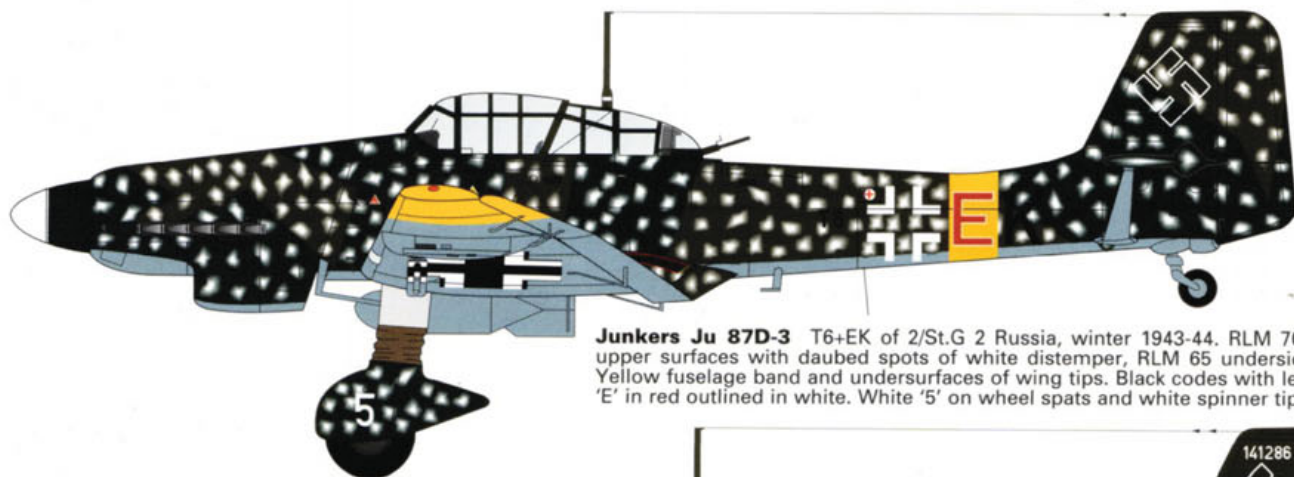
New tactics were developed as the panzers advanced. In order to keep up with the troops Luftwaffe observers with radio communications went ahead with the troops and,

in close liaison with the army commanders, were able to bring Stuka attacks to bear on any points of resistance that could not be bypassed or subdued without their assistance.

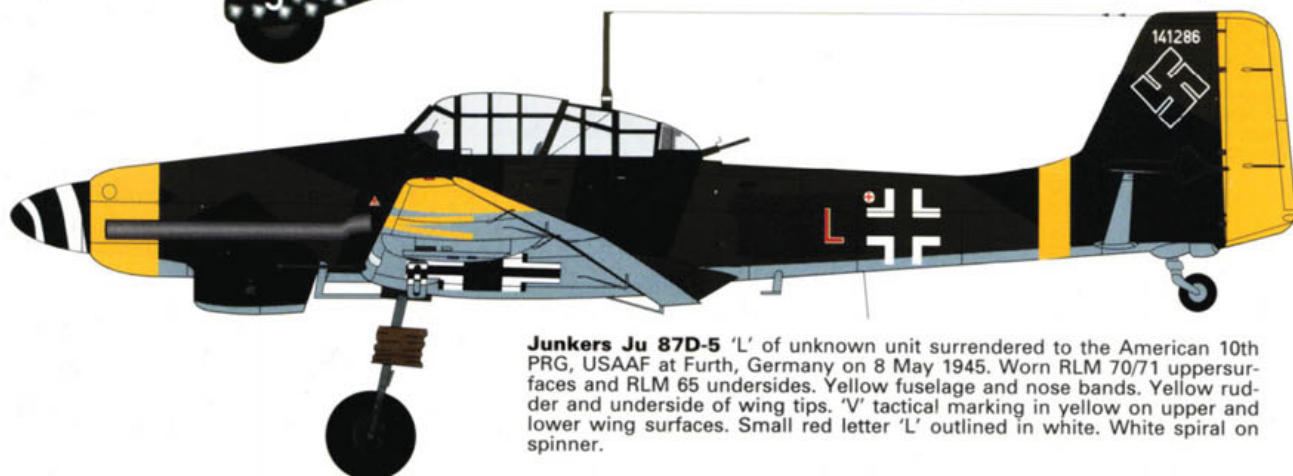
This period also confirmed the ruggedness of the Ju 87 design as the airfields used were of the most primitive and conditions atrocious. Whereas most other aircraft were grounded because of the conditions the Stukas continued to fly and on the maintenance side the ease of servicing of the Ju 87 where items such as an engine change could be done by the whole compartment being removable by the unscrewing of bolts and a simple mobile hoist did much to popularise their activities. The rugged design also stood up to ground fire as most Stuka losses were caused by this rather than by enemy fighters.

With the advance coming to a halt at Stalingrad in the south and the suburbs of Moscow and Leningrad in the north, the advent of winter called for even harsher conditions for the Stukageschwader crews. Changes in tactics also became apparent as it was found that when attacking concentrations of armoured vehicles dive bombing although accurate, could only take out one or at the most two tanks at a time for the expenditure of the whole bomb load. It meant that either many more aircraft had to be employed or new tactics developed.

It was at this point that the Germans experimented with the installation of a Flak 18 37-mm anti-tank gun weighing 600-lbs on a number of different aircraft including the Ju



Junkers Ju 87D-3 T6+EK of 2/St.G 2 Russia, winter 1943-44. RLM 70/71 upper surfaces with daubed spots of white distemper, RLM 65 undersides. Yellow fuselage band and undersides of wing tips. Black codes with letter 'E' in red outlined in white. White '5' on wheel spats and white spinner tip.



Junkers Ju 87D-5 'L' of unknown unit surrendered to the American 10th PRG, USAAF at Furth, Germany on 8 May 1945. Worn RLM 70/71 upper surfaces and RLM 65 undersides. Yellow fuselage and nose bands. Yellow rudder and underside of wing tips. 'V' tactical marking in yellow on upper and lower wing surfaces. Small red letter 'L' outlined in white. White spiral on spinner.

87D. Two could be carried under the wings with six rounds per gun encased in stream-line pods. During February 1943 several Ju 87s mounting these guns were tried out at the Rechlin testing centre and found to be entirely satisfactory. All bomb carrying mounts were removed and a trials unit *Panzerjagdkommando Weiss* was established to try them out operationally.

The Junkers Ju 87G, as this version was designated, was essentially a rebuild of the Ju 87D-5. It was found that when attacking tanks from the rear the Wolfram-core armour-piercing, three pound shells were effective against most Soviet armoured vehicles.

The first Junkers Ju 87Gs went into action during the Kursk offensive with St.G.1 and St.G.2 in 1943. They were also issued to Schlachtgeschwaders 3 and 77. Almost all were delivered to the Eastern Front but before the end of the war Ju 87Gs were also active against Allied forces in the west.

Out of a final production order for 208 rebuilt Ju 87G-2s, 174 were produced at Bremen-Lemwerder before all Ju 87 production ceased in October 1944.

SATELLITE STUKAS

Mention of the use of the Ju 87B-2 in the Reggia Aeronautica has already been made. These were supplemented by the D version later in the war.

The Romanian Air Force was a major user of the Ju 87. As the Germans wished to protect their vital oil assets in that country it was decided to arm the Romanians with various Luftwaffe aircraft and three squadrons of Ju 87Bs were established in June 1941. With some 20 Romanian divisions supporting the German attack on Russia in the south these aircraft were later supplemented by over 100 Ju 87Ds which served with Escadrila 84, 85 and 86. The Romanians capitulated on 23 August 1944 and declared war on Germany the day after which meant that the remaining Ju 87s were used against them. They were formed into Escadrila 74 using revised red, yellow and blue roundels instead of the yellow cross used earlier.

The Hungarians received Ju 87s in 1943 with enough aircraft to equip one dive bomber squadron assigned to Luftflotte 4. Both Bs and Ds were in the order. Similar numbers of both versions were supplied to the Bulgarians whose activities were confined to anti-partisan operations. These too were turned against the Germans from September 1944 when Russian forces overran the country.

NIGHT OPERATIONS

Not many realise that the Junkers Ju 87, essentially a daytime bomber, was used on a number of occasions at night.

The first known action was not long after the Battle of Britain. A few Ju 87s remained after the bulk had been posted to the Mediterranean and these were not discovered until 4 June 1941 when a Spitfire of No. 145 Squadron shot one down near Le Havre.

Junkers Ju 87R-2 T6+CN of 5/St.G 2 warming up its engine before take-off in Sicily. (Bundesarchiv)

OPERATIONAL LUFTWAFFE UNITS USING THE JUNKERS Ju 87 STUKA

AS with all Luftwaffe formations the Stukageschwader used a variety of aircraft at different times. Units could have the same basic role of dive bombing or ground attack but various units within the Geschwader could be serving on the Russian front, Western Desert, Balkans or on home duties at the same time. This makes the identification and tracking down of unit markings of considerable difficulty but the following list, although in general terms, gives an indication of which Geschwader used the Ju 87 and as far as possible codes allocated to each.

Pre-war 1936

Unit	Base	Unit	Base	Unit	Base
I./St. 162	Schwerin	I./St.G 162	Schwerin	I./St. G 163	?
II./St.G 162	Lubecca	II./St.G 162	Lubecca	II./St.G 163	?
I./St.G 165	Kitzingen	I./St.G 262	?	III./St.G 163	?
		I./St.G 165	Kitzingen	I./St.G 167	Lubecca
		II./St.G 165	Wertheim	I./St.G 165	Kitzingen
		III./St.G 165	Breslavia	II./St.G 165	Wertheim
				III./St.G 165	Breslavia
				I./St.G 168	Graz

World War 2

In July 1939 there were five main Stukageschwader operational. These consisted of:

St.G 162 <i>Immelmann</i>	Coded: 23	St.G 167	Coded: 71
St.G 163	Coded: 35	St.G 168	Coded: 81
St.G 165	Coded: 52		

With the reorganisation of the Luftwaffe into Luftflotten and the changing designation of the units within each, the Stukageschwader were divided up into the four main Luftflotten with the exception of Luftflotte 2. The remainder are shown as follows:

Luftflotte 1

Unit	Base	Equipment
I./St.G 1	Insternburg	35 Ju 87 and 3 Do 17
I./St.G 2	Cottbus	38 Ju 87
III./St.G 2	Stolp-Reitz	38 Ju 87
III./St.G 2	Langensalza	40 Ju 87

Luftflotte 3

Unit	Base	Equipment
III./St.G 51	Wertheim	40 Ju 87 and 3 Do 17

Luftflotte 4

Unit	Base	Equipment
Stab/St.G 77	Breslau-Schongarten	3 Ju 87
I./St.G 77	Brieg	40 Ju 87
II./St.G 77	Breslau-Schongarten	42 Ju 87
I./St.G 76	Graz	39 Ju 87 and 3 Do 17

No comprehensive detail seems to be compiled for the period after this as units were moved and took on additional aircraft according to operational need. The main Stukageschwader identified are therefore as follows:

Unit	Code	Unit	Code
St.G 1	A5, L1, 6G, B1	St.G 101	?
St.G 2 <i>Immelmann</i>	T6, J9, S2, 6Q	St.G 102	?
St.G 3	S7, S1, 2F, A5	St.G 103	?
St.G 5	L1, Q9	St.G 151	A5, 6Q
St.G 51	6G	St.G 186	J9
St.G 76	F1		
St.G 77	S2, F1, 5G		

By 1943 Junkers Ju 87s were employed in a number of additional roles including night interdiction, ground attack and reconnaissance. This brought about a number of different Gruppe designations such as NSGr. (night harassment group), SG. (close support and ground attack wing) and SKG (fast bomber wing). Most of these had a mixture of aircraft including fighters such as the Bf 109 and Fw 190, larger types such as the Do 217 and even obsolete machines like the Fw 58 and Hs 126. Groups identified are listed below with their unit codes in brackets where known: **NSGr. 1** (V8), **NSGr.2** (D3), **NSGr.4** (1K), **NSGr.5** (F9), **NSGr.6** (?), **NSGr.7** (4), **NSGr.8** (6J), **NSGr.9** (E8), **NSGr.10** (5B), **NSGr.20** (?). **SG 1** (A5, 6G), **SG 2** *Immelmann* (T6), **SG 3** (S7), **SG 5** (Q9), **SG 9** (P8?), **SG 77** (S2), **SG 103** (?), **SG 104** (?), **SG 151** (6Q, A5?), **SKG 10** (G3?). Additional Stukageschwader identified include **St.G 160**, **St.G 162**, **St.G 163**, **St.G 165** and **St.G 262**. Another unit not otherwise mentioned was **Lehrgeschwader 1** (L1) which was the operational development wing which became III./St.G 1 in July 1940.





This interesting picture of a Junkers Ju 87D-1 of St.G 1 shows the trapeze bomb release under fuselage hanging down. The spinner appears to be painted in RLM 70, yellow, white and RLM 70 while the individual aircraft letter is repeated on the front of both spats. (Bundesarchiv)

Others were seen and attacked on the ground at Cherbourg and sightings were made near Bayeux/Creully.

On the night of 7-8 September 1941 British radar picked up a formation of enemy aircraft tracking across the Channel at 22.30 hours. Bombs were dropped at both Margate and Ramsgate several falling in the harbour at the latter. Other aircraft attacked Dover harbour from 8,000 ft in a dive which was obviously a Ju 87 tactic.

These raids continued sporadically during the winter months but with the advent of the Beaufighter and its airborne radar they were soon superseded by faster aircraft such as the Fw 190. By the end of the year only about 30 Ju 87s remained in France according to intelligence sources.

The next night action to feature the Ju 87 was in Russia and followed the same tactics as the Russians had used with the Po-2 biplanes in harassing the enemy at night. Some 300 Ju 87Ds were modified to have flame damping exhausts and were assigned to some ten *Nachtschlachgeschwader* each comprising of three Staffeln with a total strength of 60 aircraft.

To conduct night attacks in Italy the Luftwaffe organised NSG9 being brought up to strength with aircraft from NSG2 in Poland. They used the Ju 87D-3 and made a number of not very successful night attacks on bridges when based at Caselle, near

Three Junkers Ju 87B-2s of St.G 1 using the north African coast line as a navigating pinpoint whilst on the way to their next target. Note the white fuselage band used on Ju 87s in this theatre. (Bundesarchiv)



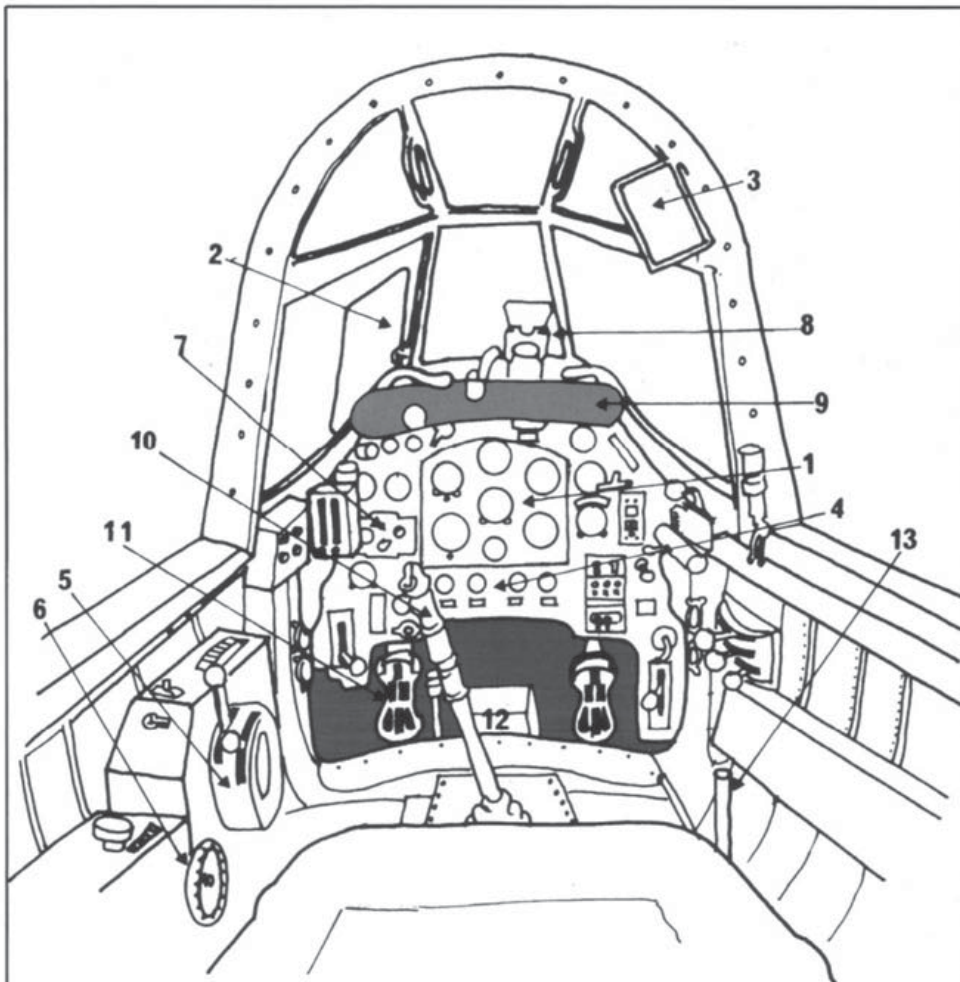
Turin.

NSG1 after having spent a period in the East Front returned to Germany to be based at Bonninghardt/South airfield being equipped with Ju 87D-3 and D-5s. They were briefed to attack artillery positions and troop or vehicle concentrations at night. Some of the Stukas were fitted with target marking flares and acted as pathfinders for the others at the same time dispensing Window anti-radar foil. RAF night fighters eagerly looking for targets soon found them. NSG2 operating from two airfields close to Cologne were engaged in similar operations against Allied troops and took part in the Luftwaffe's last major operation on New Year's Day flying sorties before and after the main attack in the Ardennes. Sporadic attacks followed thereafter but the defences were constantly alert and their efforts against bridge targets over the Weser and the Remagen bridge in Holland were not very effective. The last Stuka known to be shot down by an RAF night fighter was on 23 April 1945 when a Mosquito disposed of two of the enemy just before the war ended.

LESSER-KNOWN VARIANTS

Although the Ju 87G was the last version to be built in any numbers it was followed by the Ju 87H which was a dual control trainer based on the D variant. Most of these were converted from that model having no dive brakes and a pair of transparent blisters added to the side panel of the rear cockpit canopy to improve the instructor's view.

A further attempt to radically update the basic Ju 87 was begun in the Spring of 1941.

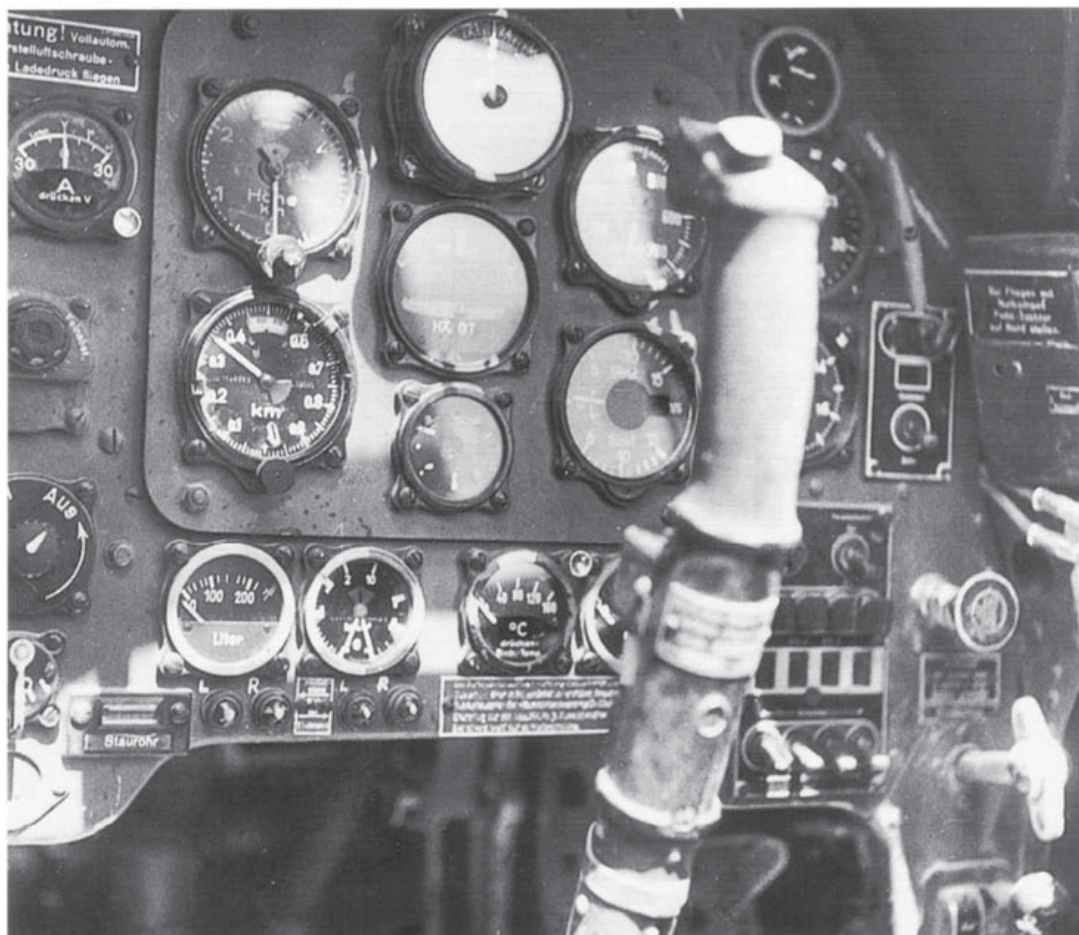


JUNKERS Ju 87 COCKPIT LAYOUT

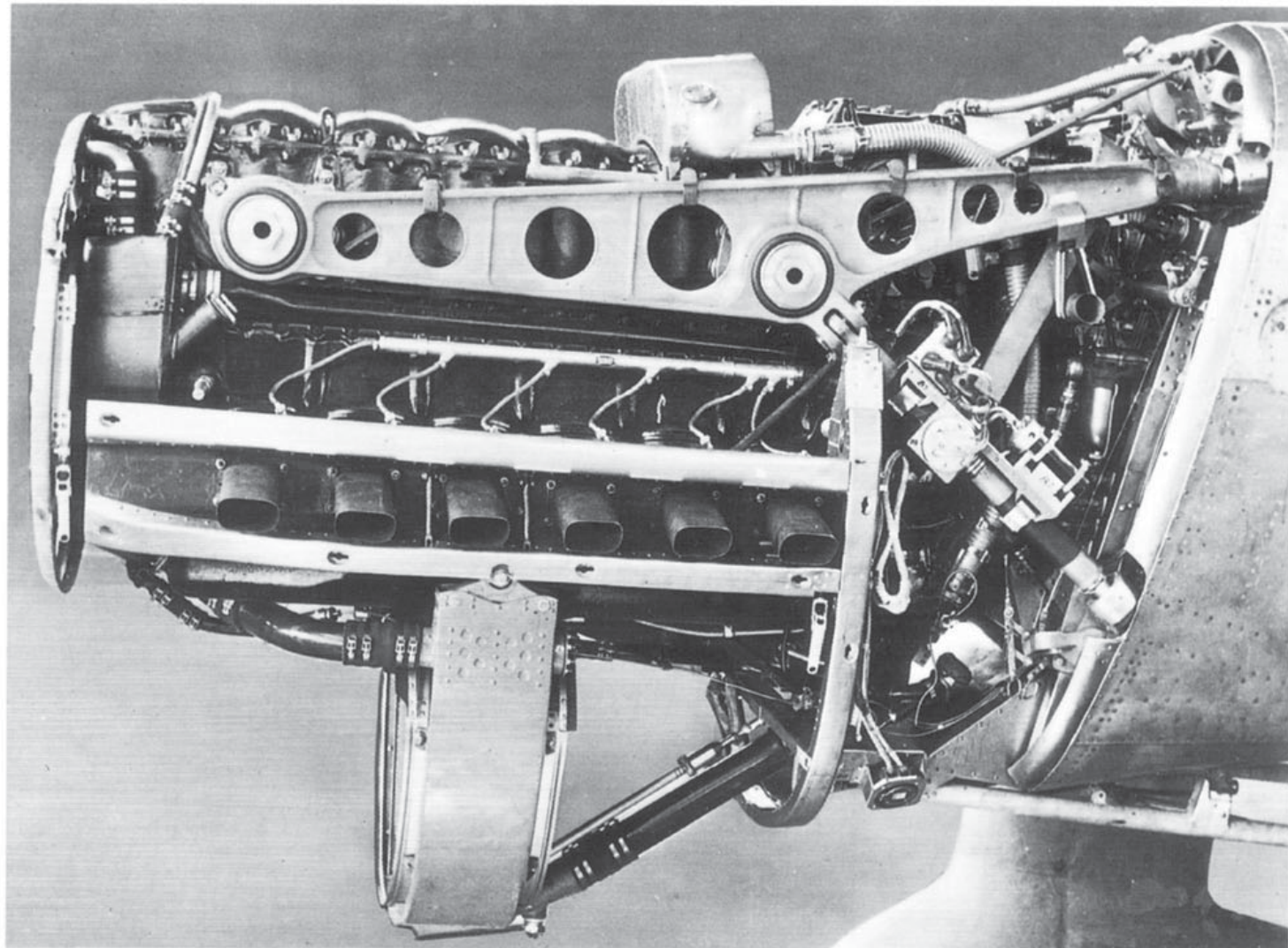
Cockpit interior colour overall RLM 66 Schwarz-grau. Instruments on blind flying panel had black faces. Some other instruments were also black faced. Lever knobs were red or yellow.

KEY

1. Blind flying panel with altimeter, turn and bank indicator, air speed indicator and what appears to be a tachometer.
2. Clear view panel, hinged at right.
3. Rear view mirror.
4. Engine instruments.
5. Throttle and mixture control.
6. Trim wheel.
7. Radio frequency change panel.
8. Gun sight.
9. Rubber padding with instruments under shown.
10. Control column with gun button on top.
11. Rudder pedals.
12. Clear view panel in cockpit floor.
13. Seat height control lever.



Ju 87 instrument panel. This close-up view shows the blind flying panel centred with engine instruments below. The radio panel is top left and the control column is topped by the forward firing gun button. (IWM)

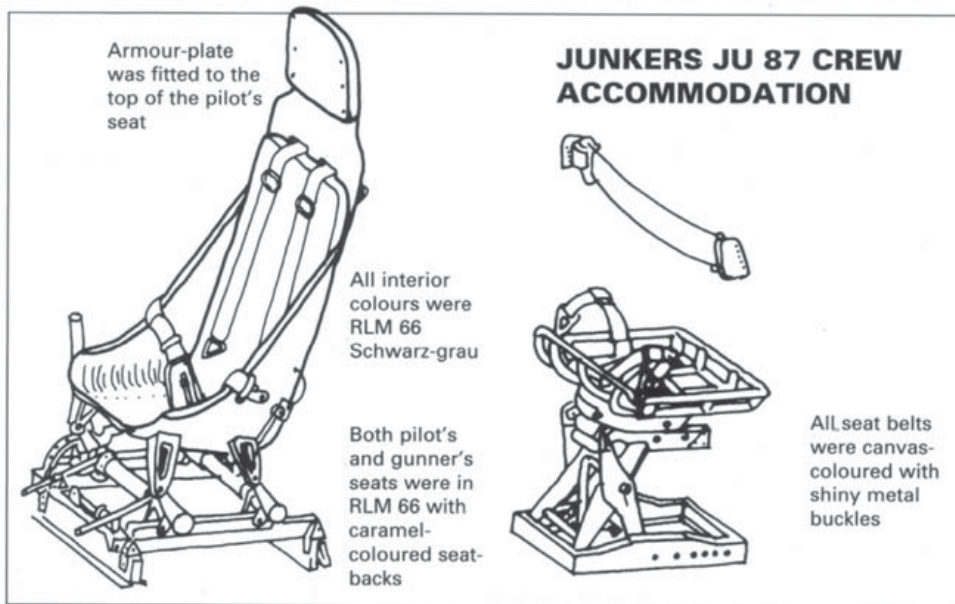


The 1,200 hp Junkers Jumo 211Da 12-cylinder, liquid cooled, inverted V engine which powered the Ju 87B-2 seen without its engine cowling making an ideal reference for model builders. The engine itself was mounted on four bearers which could be easily accessed for ground maintenance and an engine change could be made quickly with the aid of a small portable crane. (IWM)

Originally designated Ju 87F, this had an increased span, retracting undercarriage and a dorsal barbette in place of the rear gunners position with a cannon and machine gun armament. Design work was completed early in 1943 and the aircraft was re-titled Ju 187 but because it would have shown only marginally improved performance over the existing Ju 87D, it was scrapped.

Amongst the experimental versions of the Ju 87 that were built was the D-3 fitted with two large blisters above each wing capable of carrying two men. Side windows in each allowed a modicum of see-through vision for the pilot. The intention was to use this variant for clandestine operations behind enemy lines and for landing agents engaged in sabotage work. Tests were carried out with a prototype at the Graf Zeppelin research institute near Stuttgart but were abandoned.

One last version worthy of mention was the glider-towing Ju 87. These were mainly adaptations of the B/R versions but the towing hook which was externally mounted and fastened to the aft fuselage bulkheads could be attached to other versions as well. The gliders towed were usually DFS 230As which after operational service early in the



war, were relegated to training duties later.

SURVIVORS

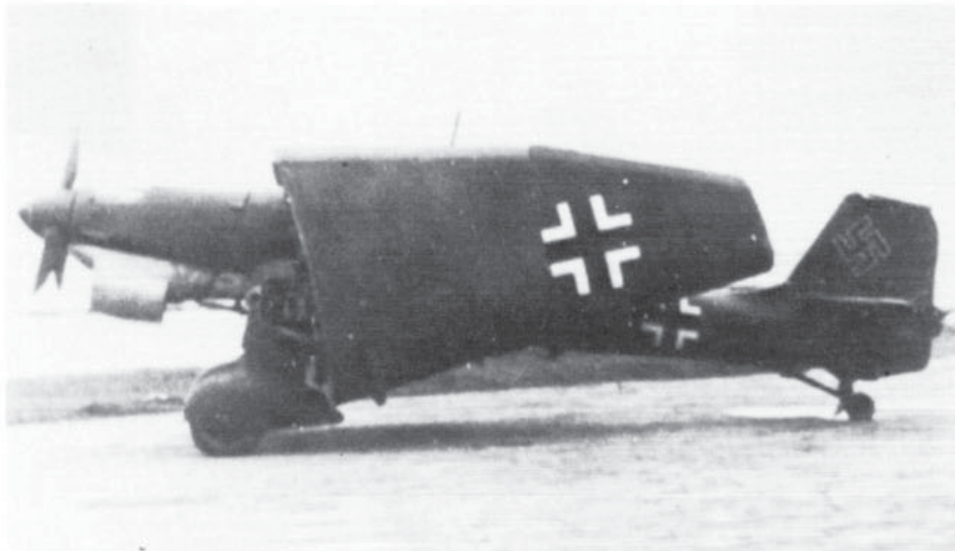
Considering the number of Junkers Ju 87s built only two survive. This was probably due to the British and Allied Disarmament Wings that moved in behind the army immediately after the end of the war and the fact that there were so few left in the West.

The two that have survived are the RAF Museum's example which is a Junkers Ju 87D-4 Werke Nummer 494085 and that in Wisconsin, USA, which is a B but was last noted without its undercarriage spats. This

one was captured by the British in the Western Desert and handed over to the Americans.

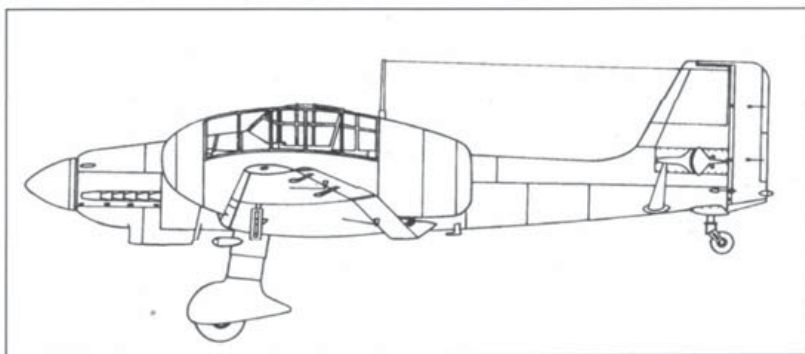
The Junkers Ju 87 was one of the most potent weapons associated with the German's type of blitzkrieg warfare and when used in the proper way against lightly defended targets could place its weapons with considerable accuracy. It will not be remembered as a very attractive aeroplane but nevertheless was a particularly valuable asset to the German High Command's generals when they were conquering Europe and part of the Soviet Union.

JUNKERS Ju 87 VARIANTS AND CLOSE-UPS



The Junkers Ju 87C was built specifically for use with the German Navy and would have equipped the attack staffeln on board the *Craf Zeppelin*, Germany's uncompleted aircraft carrier, work on which was abandoned in 1940. The aircraft was basically a B-1 but had an arrestor hook just in front of the tailwheel and as can be seen from this picture, folding wings for stowage below decks. The undercarriage was jettisonable to improve the possibilities of survival during an emergency ditching and the wing span clipped to 43 ft 3 ins to allow easier handling on deck. A total of 170 Ju 87Cs were ordered but many were cancelled when it was realised that the aircraft would not be used for its primary role. The aircraft were issued to 4/Tragergruppe 186 in December 1938 for service evaluation and possibly saw service in Poland at the beginning of the war. The Gruppe was brought up to full strength and integrated into the Luftwaffe when the carrier project was shelved. Later this became III/St.G 1

One of the most unusual modifications to be made to the Junkers Ju 87 was the D-3 variant. This had the addition of large man-carrying pods neatly streamlined into the upper surface on each wing. These were jettisonable in flight and were equipped with parachutes to allow each two-man crew to land in open country primarily for sabotage work behind enemy lines after dark. Windows were provided in each side of the pod so that the aircraft's pilot had a limited sideways vision and to prevent claustrophobia for the passengers. Testing was conducted at the Graf Zeppelin Research Institute at Stuttgart-Ruit during 1942 but was not very successful because problems were encountered with the ease of separation of the pods in flight as each had to release at exactly the same moment or otherwise the aircraft's trim would have been badly affected. The project was eventually dropped. The aircraft used was a standard D variant without further strengthening to the wing as the load, apart from the attachment points equated to that normally associated with the aircraft's bomb load. (Bundesarchiv)

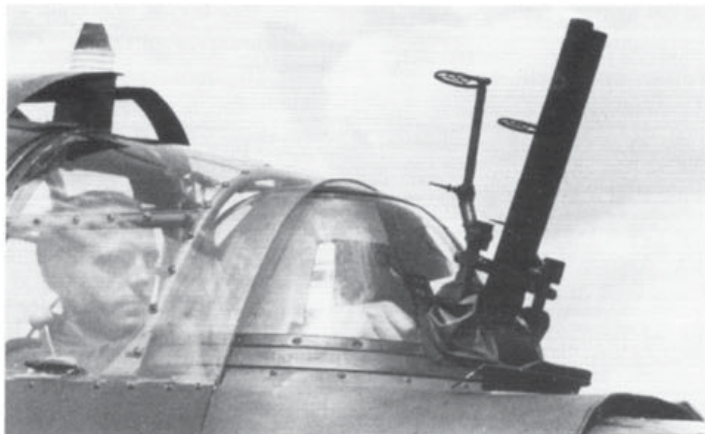


A general arrangement drawing of the Junkers Ju 87D-3 showing the shape and position of the two wing pods with which this variant was tested. Both had windows each side to allow sideways vision for the pilot and to avoid claustrophobia for the passengers.

JUNKERS Ju 87 underwing ordnance

When operating in the ground attack role a special gun pack was developed for use on Junkers Ju 87 aircraft of any variant, that could be fitted to one or both of the underwing bomb racks. Two versions were built known as the WB81A and WB81B which varied in the number of weapons installed. Armament on the A version consisted of three MG81Zs with 250 rounds per gun mounted in trays and self-contained within the pack. The B version (shown right) had six guns but a greatly reduced ammunition load. The adaption was mainly used on the Russian front and known to the crews as the 'watering can'. (Bundesarchiv)





A close-up view of the rear mounted armament of the Junkers Ju 87D and later versions. This consisted of a twin MG81Z unlike the single MG15 in earlier variants. It had armour plating integrally mounted in the turret and a ring and bead gun sight. (Bundesarchiv)



The Junkers Ju 87 was readily adapted for glider towing and as seen in the top view when used with a DFS 230A operationally or as a training glider. The Ju 87R-2 variant was favoured for this task because of its longer range, particularly useful when flying over the Mediterranean. Above: The glider towing attachment for the Ju 87 was dismantable and consisted of a simple box-like attachment that fitted to the aft bulkhead and could be quickly and easily installed under field conditions. This view shows a ground crewman fitting the towing cable in preparation for a launch. (Bundesarchiv)

JUNKERS Ju 87 Main specifications

Junkers Ju 87B-2

Wing span	45 ft 3ins
Length	36 ft 3ins
Height	13 ft 2ins
Weights	
Empty	5,980 lbs
Loaded	9,480 lbs
Engine	1,200 hp Junkers Jumo 211Da, 12-cylinder liquid-cooled inverted Vee
Performance	
Max speed	240 mph
Diving speed	404 mph
Ceiling	26,250 ft
Range	370 miles with 1,000lb bomb load
Armament	
Bombload	2,205 lbs
	Two 7.92mm MG17 in wings, one MG15 in rear cockpit

Junkers Ju 87D-5

Wing span	49 ft 2 1/2 ins
Length	37 ft 8 3/4 ins
Height	13 ft 2 ins
Weights	
Empty	8,600 lbs
Loaded (max)	14,550 lbs
Engine	1,400 hp Junkers Jumo 211J, 12-cylinder liquid-cooled inverted Vee
Performance	
Max speed	255 mph
Diving speed	restricted to 373 mph
Ceiling	24,248 ft
Range	internal fuel 510mls
Armament	
Bombload (max)	3,968 lbs
	Two 20mm MG151 in wings, MG81Z twin 7.92 machine guns in rear cockpit.

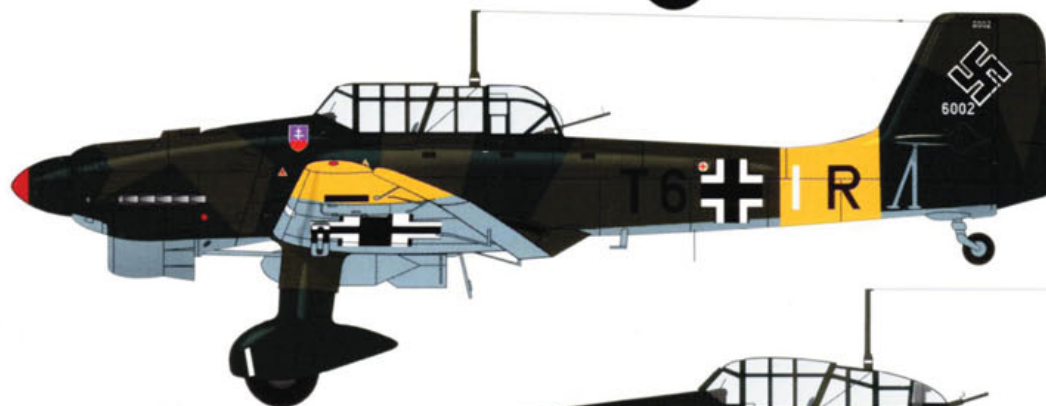
One of the largest non-German countries to have the Junkers Ju 87 on strength was that of Romania. Assigned to Luftflotte 4 both Ju 87B and D variants were used on the Russian front. This picture shows a D-1 with ground crew. (Bundesarchiv)



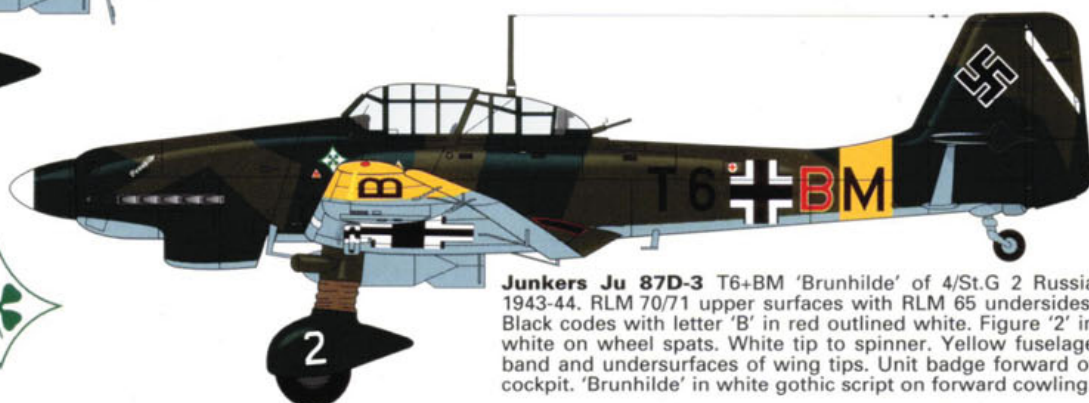


III/St.G 51 shield has a red devil bearing a red and yellow torch riding on a black bomb on a yellow background

Junkers Ju 87B-1 6G+AT of 9/St.G 51 (renumbered 6/St.G 1 on 9 July 1940) when in France in 1940. RLM 70/71 upper surfaces with RLM 65 undersides. Black codes with letter 'A' in yellow. Yellow band on spinner and cover of siren mount. Unit badge under cockpit



Junkers Ju 87B-2 W.Nr.6002, T6+IR of 7/St.G 2, Russia 1941-42. RLM 70/71 upper surfaces with RLM 65 undersides. Black codes with letter 'I' in white repeated on the wheel spats. Yellow fuselage band and undersurfaces of wing tips. Red tip to spinner. Unit badge forward of cockpit. Note W.Nr. repeated below swastika.



4/St.G 2 badge has green clover leaf on a green, outlined white, diamond shaped background

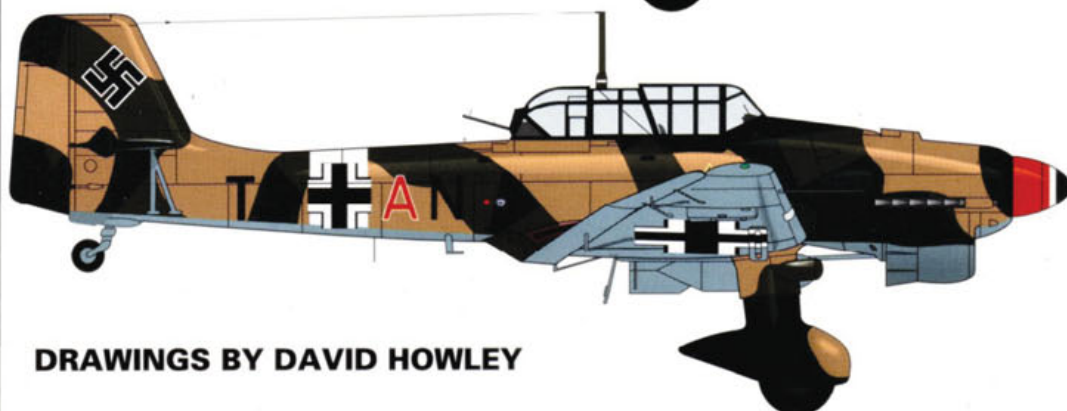
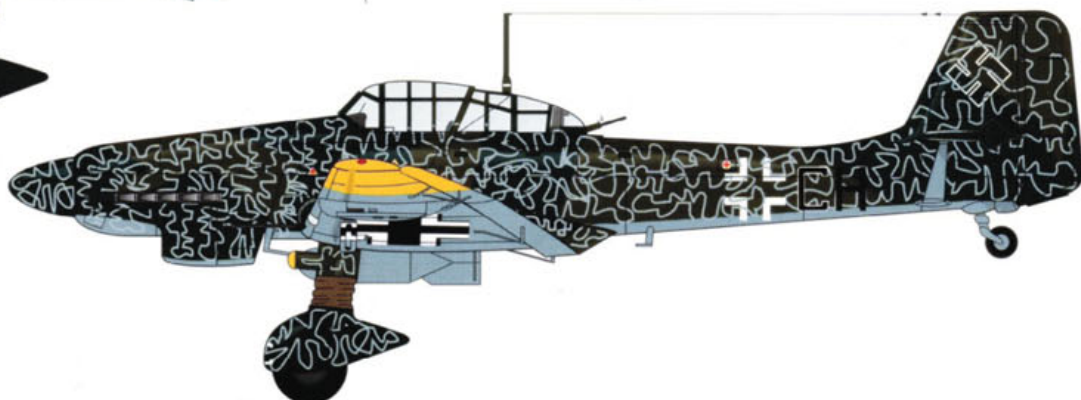


Junkers Ju 87D-3 T6+BM 'Brunhilde' of 4/St.G 2 Russia 1943-44. RLM 70/71 upper surfaces with RLM 65 undersides. Black codes with letter 'B' in red outlined white. Figure '2' in white on wheel spats. White tip to spinner. Yellow fuselage band and undersurfaces of wing tips. Unit badge forward of cockpit. 'Brunhilde' in white gothic script on forward cowling.



Junkers Ju 87D-1 of 216 Squadriglia, Reggia Aeronautica, October 1943. RLM 70/71 upper surfaces with RLM 65 undersides and areas of dark olive green overpainting of the original German markings. White fuselage band containing the Roman figures 'VIII'

Junkers Ju 87D-7 +CH of 1/NSGr 9, Florence, Italy, 1944. RLM 70/71 upper surfaces extensively covered with a scribble pattern of RLM 76. RLM 65 undersides. Codes black with letter 'C' outlined in white and repeated on front of wheel spats.



Junkers Ju 87B-2 T6+AN of 5/St.G 2 North Africa, 1941. RLM 70/71 upper surfaces with bands of Italian sand. RLM 65 undersides. Black codes with letter 'A' in red outlined white. White fuselage band. Red spinner with narrow white band and black-green tip

DRAWINGS BY DAVID HOWLEY



The RAF Museum's Junkers Ju 87D is preserved in the Battle of Britain annexe. (A.W.Hall) Below: This Ju 87D-5 carries the code of Lehrgeschwader 1 but is part of I/St.G 1 on the Russian front in 1943. A Focke Wulf Fw 190A is seen taking off overhead. Typical of so many operational Stuka airfields, bombs are left at dispersals for immediate loading between sorties. (Bundesarchiv).

