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LUFTWAFFE GROUND ATTACK UNITS 1939-45

MARTIN PEGG



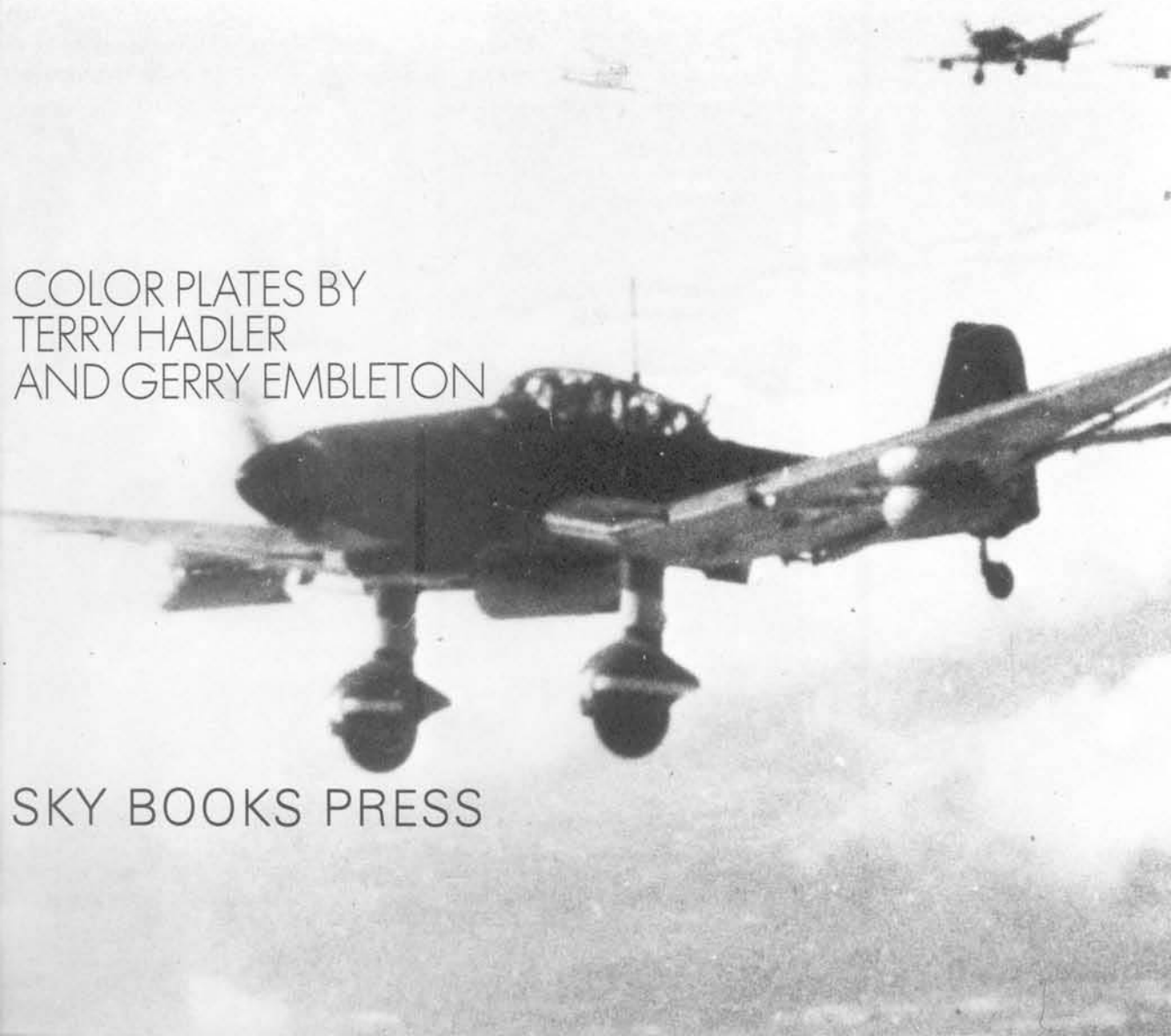
AIRCAM/**AIRWAR** SERIES EDITOR: MARTIN WINDROW

LUFTWAFFE GROUND ATTACK UNITS, 1939-45

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THE NEW WARFARE

Influenced by the trench warfare of the First World War, German military planners of the 1930s drew up a new concept designed to bring rapid mobility to the battlefield. This lightning war, or Blitzkrieg, called for particularly close co-operation between air and armoured forces with aircraft primarily employed in the close support rôle, disrupting the enemy's back area – especially communications – and paving the way for deep armoured penetrations by denying him the ability to organise resistance or counter-attack. Should the occasion arise the air force could also support

the step-by-step advance of the army by attacking targets directly in the line of advance.

It was already realised as a result of tests carried out at the secret German testing and training establishment at Lipezk in Russia during the 1920s that the precision bombing of pin-point targets could only be achieved by an aircraft releasing its load whilst in a steep dive directly over the target – the dive-bomber. American and Japanese aviation planners were also evincing interest in the idea of the dive-bomber and in 1931, while the US Navy was experimenting with the Curtiss Hawk



1. One of the three Junker Ju87A-1s which formed the 'Jolanthe Kette' of the Legion Condor; drawn from Stukageschwader 163 'Immelmann', the detachment was

sent to Spain in December 1937, and was flown by a large number of rotated crews from St.G 163, usually against targets behind the front lines. (Hans Obert)

II, the Japanese placed an order with the German Heinkel company calling for the development of a two-seat dive-bomber, the He50. The second prototype was demonstrated before the Staff of the still-secret German Air Force, who were sufficiently impressed with the aircraft to request a small evaluation batch, and subsequently placed an order for a small production quantity.

Meanwhile Ernst Udet, stunt pilot and former fighter ace, was invited to attend an air display in America where he witnessed a demonstration of the Curtiss Hawk. In spite of the Allies' complete ban on German military aviation, Udet had nevertheless continued to fly privately, resisting pressure from Hermann Göring to take up a necessarily non-flying administrative position to aid in the building up of the new air force. Udet was so impressed with the American machine's diving performance that he finally persuaded the German Air Ministry to purchase two for evaluation. Upon their arrival in Germany during December 1933, they were extensively tested at the Rechlin Experimental Centre.

Official opinion of the value of a dive-bomber

2. Luftwaffe armourers of St.G 165 bomb up the unit's Ju87A-1s. Note the hydraulically-raised cradle on the bomb trolley, and the lugs on the central band round the bomb, to locate it on the fuselage crutch which swung it down and clear of the propeller arc during bomb release. (US National Archives)

was, however, divided. Limited raw materials, fuel and production capacity simply did not permit the construction of heavy bomber fleets and had the effect of restricting the choice of aircraft to medium and light bombers with the highest degree of bombing accuracy. Whilst Hans Jeschonnek, Chief of the Luftwaffe General Staff, favoured dive-bomber development on these economic grounds, Wolfram von Richthofen, Chief of the Development Section of the Technical Office, was totally opposed to the idea, claiming that such a machine would be too vulnerable to anti-aircraft fire and that 'diving to a level below 6,000 feet is complete nonsense'.

Contrary to von Richthofen's wishes, a few officers at the Technical Office continued to pursue the matter and had in 1933 already drawn up a programme and two-part specification. The first part called for a relatively simple aircraft with which to equip an experimental dive-bomber unit, and, of the designs submitted, the Hs123 was considered to be the best. Deliveries of the Hs123A-1 commenced during the late summer of 1936. The second phase, issued in January 1935, called for a more advanced machine and was in fact drawn up around the Junkers Ju87, development of which, unofficially urged by Udet, was already well advanced into the prototype stage.



On 5 May 1935 the existence of the new Luftwaffe, secretly built up under a variety of disguises, was officially revealed and, in January 1936, Udet finally gave way to persuasion and joined the Luftwaffe. In June he was appointed Chief of the Technical Office and from this position gave his full and official support to the dive-bomber programme, rescinding von Richthofen's directive calling for the discontinuation of Ju87 development. Prototype construction of the Ju87 continued and, following trials at Rechlin, when the machine's most serious contender broke up in the air, the Ju87 was ordered into production.

The first dive-bomber unit was formed from an offshoot of a disguised fighter unit operating Ar65s and He51s from Berlin-Staaken on smoke-laying and communications duties for the army under the code name '*Reklamestaffel Mitteldeutschland*' (Advertising Squadron Central Germany). The aircrew of this formation were given the task of practising dive-bombing tactics in addition to their fighter training and, on 1 October 1935, the dive-bomber element of *Reklamestaffel Mitteldeutschland* was formed into a separate experimental unit equipped with Ar65s and He50s and designated *Fliegergruppe Schwerin*. However, neither type was ideally suited to its rôle and even in a power dive the He50 proved incapable of attaining the diving speed required for accurate dive-bombing. Fortunately, deliveries of the Hs123 were soon to hand and in the autumn of 1936 were received by *Fliegergruppe Schwerin*, since redesignated to form the first of the Luftwaffe's *Stukagruppen*, I/St.G 162. Simultaneously, two further Hs123 units were activated: II/St.G 162 at Lübeck-Blankensee and I/St.G 165 at Kitzingen. Subsequent Luftwaffe planning called for a total of six *Stukagruppen*, and by 1 April 1937 II/St.G 165 had begun to form with Hs123s and I/St.G 162 and I/St.G 165 were converting to the newly available Ju87A-1, together with III/St.G.162 at Wertheim and III/St.G 165 at Breslau.

Taking advantage of the Spanish Civil War, which had broken out during July 1936, to evaluate its aircraft and tactical theories under operational conditions, the Luftwaffe formed the *Legion Condor* to provide air support for General Franco's Nationalist forces. At this time the Luftwaffe had

no plans to form units specifically for direct battlefield support, but the matter arose quite unexpectedly in March 1937 when von Richthofen, who had earlier tried to cancel the dive-bomber programme, personally witnessed the rout of an advancing Republican column by three He51s which, outdated in the fighter rôle, had been experimentally fitted with bombs.

Impressed by this demonstration of *direct* battlefield support, von Richthofen requested a number of Hs123s for evaluation and, although intended as dive-bombers, these aircraft immediately proved highly successful in the ground attack rôle, bombing and strafing the battlefield with excellent results. Dive-bombing itself was later carried out by three Ju87A-1s which arrived in Spain in December. Initial trials were disappointing, but with the introduction of the improved Ju87B-1 better results were obtained; the machines proved so successful against targets behind the front lines that plans drawn up by a special duties staff for the organisation of specialised ground attack formations for *direct* battlefield support as pioneered in Spain were abandoned and ground attack units (*Schlachtfliegergruppe* 10, SFG 20, 30, 40 and 50) were provisionally formed. Employed during the occupation of the Sudetenland, these were largely disbanded, the sole exception being the Hs123-equipped SFG 10 which was incorporated into the newly activated and élite Teaching and Development Wing, *Lehrgeschwader 2*, as II (*Schlacht*)/LG 2.

On 1 May 1939 a full-scale redesignation of all Luftwaffe units took place; in addition to the Stuka units shown in Table 1, 4 (*Stuka*)/*Trägergruppe* 186 had been formed at Burg, near Magdeburg, for service aboard the uncompleted aircraft carrier *Graf Zeppelin* and was operating the Ju87B, as was the élite IV (*Stuka*)/LG 1.

In August 1939, the Hs123s of II (*Schlacht*)/LG 2 were transferred from their peacetime base at Tutow to Alt Rosenberg close to the Polish frontier. At the same time the Stuka units were also made ready for the invasion which aimed for two massive pincer movements into Poland from north and south. In the north, *Luftflotte* 1 controlled IV (*Stuka*)/LG 1, I/St.G 1, II and III/St.G 2 and the 4 (*Stuka*)/186. *Luftflotte* 3's III/St.G 51 operated



3. Between sorties over Poland, groundcrew re-arm and re-fuel a Ju87B-1 of IV (Stuka)/LG 1 while the pilot relaxes on the wing. (Author's collection)

in the south, together with *Luftflotte 4's* I/St.G 76, I and II/St.G 77 and I/St.G 2. The Luftwaffe, in order that it could support the army unhindered by enemy air opposition, had first to gain air superiority by destroying the Polish Air Force on the ground in a series of surprise attacks.

Because of bad weather in the early morning of 1 September 1939, Air Fleet commanders ordered their aircraft off against targets not specified in the priority list, but it was later discovered that Crakow airfield was covered only by a thin mist and I/St.G 2 under Maj. Oskar Dinort (RK, EL 14.7.41) bombed the buildings and runways leaving the airfield under a pall of smoke. Other Stuka units attacked the airfields at Katowitz and Wadowice, whilst Hptm. Sigel (RK, EL 3.9.42) led I/St.G 76 in an attack against a line of emplacements at Lublinitz. During the afternoon a column of Polish soldiers, horses and vehicles was annihilated near Wielun by I/St.G 2 and I/St.G 77 whilst

II and III/St.G 2 together with Bern von Brauchitsch's IV (*Stuka*)/LG 1 and Hptm. Helmut Mahlke's 4/(*Stuka*) 186 attacked ships and harbour installations along the Danzig Bay, virtually eliminating the Polish Navy.

From first light on 1 September, the 36 Hs123s of II (*Schlacht*)/LG 2 flew as many as ten sorties a day in support of the army's advance on Warsaw, bombing and strafing a path wherever German troops encountered resistance, often employing '*Flambos*' – light incendiary bombs fitted with percussion fuses. As they advanced, these aircraft flew from fields that were declared fit for operations by simply driving a car over the surface at 30 mph; if the ride was not too bumpy the field immediately became a forward airstrip! On the second day of the campaign, with the Polish Navy and Air Force almost destroyed, Stuka operations in full support of the ground forces began. Paralysed by these devastatingly accurate

air attacks the Poles were unable to contain the Germans' armoured thrusts, and by 8 September German troops were in the outskirts of Warsaw itself.

Unexpectedly, twelve Polish divisions by-passed at Kutno boldly counter-attacked the flank of the main German advance towards Warsaw, and all available German aircraft were transferred to meet the threat. As the Poles crossed the Bzura several Stuka formations destroyed the bridges, cutting off forces which had already crossed and preventing the bulk of the Polish force from engaging the German 8th Army. For two days the Stukas spread destruction on the Polish armour and vehicles in a continuous and unprecedented aerial attack; while the pilots of II (*Schlacht*)/LG2 discovered during a low-level mission that the appalling din emitted by the Hs123's engine when set at 1,800 rpm was sufficient to panic and terrorise the ranks of horses and men below. On 19 September 170,000 surrounded Poles surrendered and the battle of the Bzura was over.

Meanwhile, during the battle of the Vistula, the crews of I/St.G 76 repeatedly attacked the fortress of Modlin, bravely defended until 25 September, when the Luftwaffe prepared for the bombardment of targets in Warsaw. Eight *Stukagruppen* totalling some 240 aircraft, attacked the city together with medium bombers producing so much smoke and dust that the army complained it could not see the targets it was supposed to be shelling. The aerial assault continued until the 27th, when Warsaw finally surrendered, bringing to an end a campaign from which the Ju87 emerged with a legendary reputation.

THE WEST, 1940

The Luftwaffe's next major operation, the invasion of Denmark and Norway, opened on 9 April 1940. Denmark surrendered on the first day and the Luftwaffe began landing troops on key airfields in the south of Norway. Initially, only 1 and 3 *Staffeln* of Hptm. Hozzel's I/St.G 1 (now equipped with the extended-range Ju87R-1 and controlled by X *Fliegerkorps*) were involved, operating against the fortifications at Akershus and

Oskarborg from Kiel/Haltenau in northern Germany, but once the airfields at Fornebu and Sola were in German hands the entire *Gruppe* moved to Norway.

Successful missions included the bombing of Vigra radio station, when a Ju87 from 2 *Staffel* rammed the transmitter aerials, and precision attacks on roads and railways, of particular importance in the mountainous country. Several ships were attacked including *HMS Suffolk*, an escorted convoy leaving Namos, the French destroyer *Bison* and the Royal Navy destroyer *HMS Afridi*. In mid-April Luftwaffe units in that area came under the control of Generaloberst Stumpff's *Luftflotte 5*, and during May the Stukas continued their attacks against shipping, sinking the Polish destroyer *Grom* and damaging the anti-aircraft ship *HMS Black Swan*. Two Knight's Crosses were awarded to I/St.G 1 during the campaign, one to Hozzel for the work of his *Gruppe* at Drontheim and for sinking a submarine in the Skagerrak, the other to Martin Möbus for his exceptional attacks on shipping which brought his total personal score to one battleship, one cruiser and one destroyer.

Even before the fighting in Norway had ended, German forces launched a campaign in the West on 10 May against Belgium, Holland and France.

4. The wing-mounted machine guns of a Ju87B-1 of 9/St.G 2 are re-armed during the French campaign, 1940. (Author's collection)



The Hs123s of II (*Schlacht*)/LG 2 and over 350 Stukas from St.G 2, III/St.G 51, I/St.G 76, and I/ and III/St.G 77 were controlled by VIII *Fliegerkorps*, now under *Luftflotte 2*.

Once free of effective air opposition, the Stukas bombed Belgian positions without respite in support of airborne troops landing to capture the Eben Emael fort and vital bridges over the Albert Canal. At Moerdijk, road and railway viaducts captured by paratroops held out for three days until relieved by advancing German Army units, a feat made possible by continuous Stuka support. Further Stuka sorties assisted deep armoured thrusts either side of Liège, and on 12 May St.G 2 and St.G 77 attacked armoured columns west of the city.

The main attack in the West, however, was made through the Ardennes into France. By the evening of 12 May, panzer divisions had reached the river Meuse near Sedan, where the *Luftwaffe* was to smash resistance in the northern extension of the Maginot Line. VIII *Fliegerkorps* was transferred to *Luftflotte 3* for the attack and throughout the morning of 13 May the Stukas were armed and fuelled at their forward airfields. The first Stukas appeared over the Maginot Line towards midday and immediately dived onto the gunpits and pillboxes. The noise was terrifying; the wailing of engines and sirens pierced by the shriek and crash of falling bombs totally demoralised the defenders. After five hours, during which more than 200 Stuka sorties were flown, the German



5. The Ju87B with extra wing tanks was designated Ju87R. Here Ju87R-2s, almost certainly of Hptm. Hozzel's I/St.G 1, stand ready for action. This was the only Stuka unit involved in the Norwegian campaign. (US National Archives)

Army crossed the Meuse to find the French soldiers too stunned to fight back.

For the next two weeks the *Stukagruppen* brought an extreme concentration of striking power to bear against vital rear areas, opening a path to the Channel. II (*Schlacht*)/LG 2, escorted by Bf109Es and aided by a Luftwaffe *Flakregiment*, successfully destroyed a counter-attack by French tanks and motorised infantry near Cambrai. Although several Stukas were lost, including those flown by the *Kommodore* of St.G 77 and the *Gruppenkommandeur* of III/St.G 51, initial losses were light; but once the dive-bombers reached Boulogne, Dunkirk and other Channel ports, they encountered serious opposition for the first time when they came within range of the eight-gunned RAF Spitfires and Hurricanes operating from southern England. Losses began to mount; a formation from I/St.G 76 was scattered by British fighter attacks over Dunkirk, and one of the unit's pilots later reported that 'This was our first real taste of war'. Moreover, the effect of intensive operations was beginning to tell; the number of serviceable aircraft in many units dropped to below 50% of original strength, and the pilots too began to feel the strain of continuous action.

During the evacuation of British forces from Dunkirk, the dive-bomber pilots found the highly manoeuvrable warships difficult targets, but the slower and less agile merchantmen presented easier prey. Although large-scale operations were prevented by bad weather and RAF fighters often broke up the formations of German aircraft before they reached the beaches, a large number of destroyers, passenger ships and many smaller and assorted merchant vessels were sunk. After 4 June, when the evacuation of British troops was completed, the Germans turned their attention to the south for operations east of Paris. Dive-bombers supported the crossing of the Marne, Seine and Loire rivers until Paris fell and hostilities ceased on 24 June.

The end of the campaign in France also marked the final phasing out of the Hs123s, which had proved remarkably successful in areas where the Luftwaffe enjoyed air superiority. The unit therefore withdrew to Brunswick for training on the Bf109E, followed by a move to Boblingen for

specialised fighter-bomber, or *Jabo*, training. Meanwhile, the *Stukagruppen* assembled at various airfields in the Cherbourg Peninsula in preparation for the assault on Britain and on 6 July were regrouped and reorganised to form *Geschwader* of full strength. Thus, 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. Shortly afterwards I *Gruppe* of *Stukageschwader* 3 was activated with the formation of a *Stabsstaffel* consisting of a few crews and machines from I/St.G 76 under Hptm. Sigel.

During July, dive-bombing attacks were mainly directed against Channel convoys with some isolated attacks against harbour installations. On 9 July St.G 77 bombed Portland naval base, losing Hptm. Freiherr von Dalwigk zu Lichtenfels, the *Gruppenkommandeur* of I/St.G 77, whose aircraft was shot down into the sea by Spitfires. On 27 July *Stukagruppen* from as many as three different *Geschwader* took part in several raids against shipping and some 60 machines twice attacked a convoy near the Dover Straits. Dover itself was attacked by IV (*Stuka*)/LG 1 and St.G 1 on the 29th, and on the morning of 8 August 57 aircraft from St.G 2, St.G 3 and St.G 77 took part in a running battle against a convoy off the Isle of Wight, during which three Ju87s were shot down by RAF fighters. In the afternoon, 87 escorted Ju87s again attacked the convoy and, although only four of the ships remained undamaged as they sailed into Swanage, five more Stukas failed to return.

The Battle of Britain began in earnest at midday on 13 August, but the only Stuka unit to meet with any success was IV (*Stuka*)/LG 1 commanded by Hptm. von Brauchitsch, who led his 40 aircraft in an attack on Detling airfield and returned to base without loss. Elsewhere, II/St.G 2 under Maj. Walter Ennecerus (RK 21.7.40) attacked the RAF fighter station at Middle Wallop, but the *Gruppe* was intercepted by fighters which, as Maj. Ennecerus reported, 'ripped our backs open to the collar'. St.G 77 under Maj. Graf von Schönborn (RK) was unable to locate its target at Warmwell because of dense cloud, and II/St.G 1 under Hptm. Anton Keil (RK 19.8.40) also ran into navigational difficulties; unable to find Rochester airfield, the formation jettisoned its bombs when attacked.

Nine aircraft from St.G 2 failed to return from attacking Tangmere on the 16th, and on 18 August St.G 77 suffered a staggering defeat when it attacked Poling radar station, Ford and Thorney Island. No less than sixteen aircraft were shot down, including that flown by Hptm. Meisel, *Kommandeur* of I Gruppe, whose machine had been specially fitted with armour plate from wrecked French Morane fighters; two aircraft crashed on their way home and four more were damaged. Clearly such losses could not be tolerated, and in order to prevent their complete destruction the *Stukagruppen* were immediately withdrawn from further participation in the battle.

Meanwhile, the aircrew of II (*Schlacht*)/LG 2 were still undergoing *Jabo* training at Boblingen.

6. Henschel Hs123As of II (*Schlacht*)/LG2 – note unusual use of individual aircraft numbers, in the fighter style. Early in the war these aircraft usually bore a four-character code beginning with the Geschwader cypher 'L2', while Hs123s of the later *Schlachtgeschwader* used an individual letter system. (James V. Crow)

After the sturdy and stable Hs123, the pilots found difficulty in becoming accustomed to the narrow-track undercarriage and higher landing speeds of the Bf109E, and landing accidents were frequent. Operational training continued when the unit, with 33 Bf109E-4/Bs, moved to St. Omer in August 1940. On 6 September the unit, based at Calais-Marck, suffered its first combat loss on the new type when two aircraft were shot down during an attack against London.

With the German bombers switching to night attacks, Göring ordered that the Bf109s from one *Staffel* of every *Jagdgeschwader* be equipped with bomb racks. Although unpopular with the pilots, this instruction resulted in the immediate avail-



ability of over 200 Jabos which, flying in at up to 33,000 feet, posed a considerable interception problem for defending fighters. On 7 October an almost continuous stream of Jabos appeared over Kent, and sorties of varying intensity continued throughout the month. Overall, Jabo losses were low, but II (*Schlacht*)/LG 2 lost three Bf109Es on 29 October, including the machine flown by the

Staffelkapitän of 5 *Staffel*, Oblt. Bern von Schenk.

The night bombing and daylight nuisance, or hit-and-run, sorties against London and various coastal towns in the south continued until early 1941, but the threat of invasion had passed and Luftwaffe forces on the Channel Front were gradually depleted as units were sent east for the invasion of Russia.

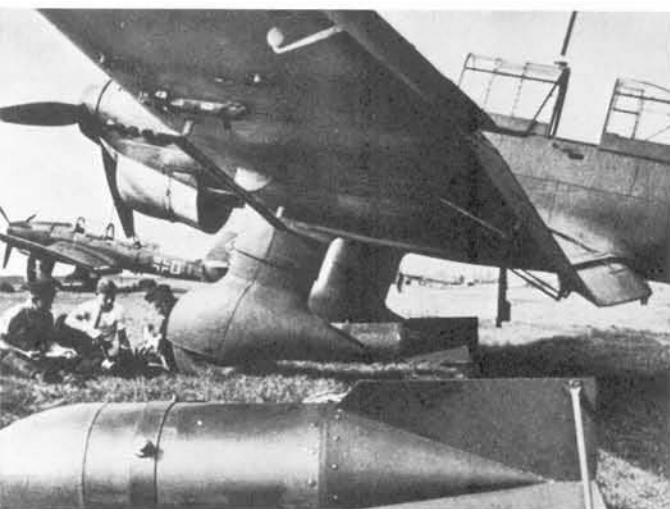


MEDITERRANEAN AND BALKAN OPERATIONS

In January 1941 the Stukas of I/St.G 1 and II/St.G 2, operating under *Stab*/St.G 3 with a total of 79 aircraft, arrived in Sicily to attack Allied convoys. Their first action took place on 10 January when a convoy from Alexandria was attacked and the carrier *HMS Illustrious* was severely damaged. A further attack was prevented by a shortage of suitable bombs but the next day twelve Ju87R-1s attacked and hit the cruisers *HMS Gloucester* and *Southampton* as they made their way back to Alexandria; *Southampton* was abandoned and sunk.

On 13 January, after reconnaissance aircraft had discovered *HMS Illustrious* in Valletta Harbour, Hptm. Hozzel's I/St.G 1 struggled into the air with special 2,200 lb bombs for the first in a series of determined attacks. Vicious anti-aircraft fire caused heavy losses, but the attacks continued for a week, during which, Hozzel recalls, 'We now lost our best crews. The leader of my 2 *Staffel*, a very hard chap, could not report to me for tears. He was the last of his *Staffel*; all his old chaps were lost'. The dive-bombers caused serious damage to the dockyard during these attacks, but although the carrier was hit repeatedly it eventually sailed via

7. Ju87B-1s of the 10.Staffel of Hptm. von Brauchitsch's élite IV(Stuka)/LG 1 during the French campaign; the machine in the background is coded L1+DU, the 'D' in the white of the first *Staffel* in the *Gruppe*. Note bomb lugs. (Author's collection)

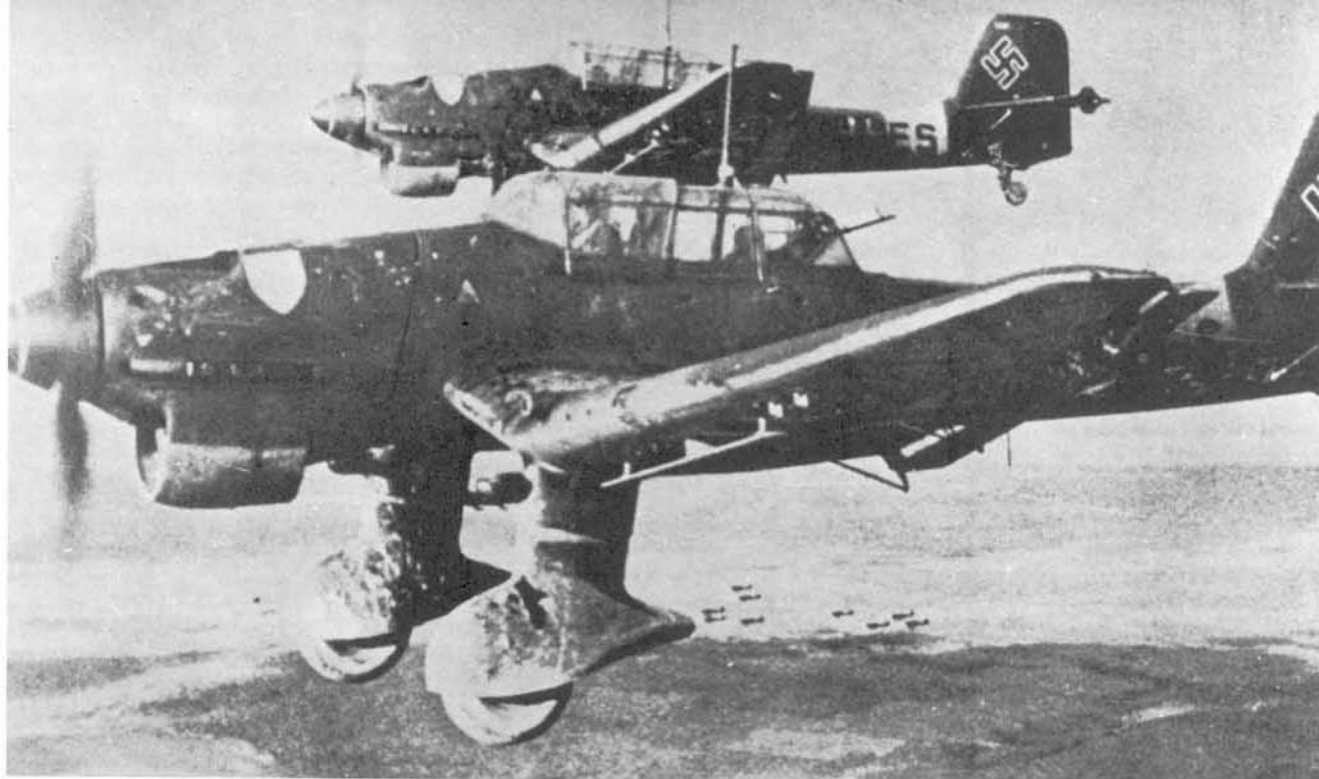


Alexandria to the USA for extensive repairs.

At about this time the Luftwaffe began its preparations for the invasion of the Balkans and by 5 April, *Stab*, I and III/St.G 2, I/St.G 3 and II (*Schlacht*)/LG 2 had assembled on Bulgarian airfields under VIII *Fliegerkorps*. Additional ground-attack forces were assembled in Austria under the *Kommandeur* of *Stab*./St.G 3 who controlled II/St.G 77 and a number of fighter *Gruppen*, while the *Kommandeur* of St.G 77, leading the *Stab*, I and III/St.G 77, also had a number of fighter and destroyer *Gruppen* under his command in Rumania for ground-attack duties.

On 6 April German and Italian forces attacked Yugoslavia. After completely destroying Prilep airfield, II (*Schlacht*)/LG 2 attacked enemy columns and flew reconnaissance sorties in support of the attack on Skopje, crossing the border into Greece within two days. Heavy air attacks ensured German mastery of the air and St.G 77 heavily bombed Belgrade, while forces under *Stab*/St.G 3 attacked defences in the path of the German 2nd Army thrusting into Yugoslavia from Austria. By 14 April Yugoslavia had sued for peace. In Greece, Stukas from VIII *Fliegerkorps* harassed retreating Allied troops and obliterated all resistance, while II (*Schlacht*)/LG 2 struck at positions near Servia. Although Gloster Gladiators destroyed a few of LG 2's Bf109s, the pace of the German advance eventually forced the RAF to withdraw to Crete, giving the Luftwaffe complete mastery in the air. Athens fell on 27 April and a parachute assault supported by VIII *Fliegerkorps* at Corinth allowed the Germans to fan out across the Peloponnese.

Already the Allies had begun to evacuate their troops to Crete, and once again the hard-worked II/LG 2 was in the spearhead of the attacks, bombing and strafing vessels in the Aegean Sea and Suda Bay. VIII *Fliegerkorps* then turned its attention to the invasion of Crete itself, Stukas and ground-attack fighters making heavy attacks on British defences. Fearful of a seaborne assault, the Allies sent a powerful force of warships to Crete and, in so doing, set the stage for one of the Stukas' most spectacular victories. Between 21 and 23 May the destroyers *HMS Juno*, *Greyhound*, *Kashmir* and *Kelly* were sunk, together with the cruiser



8. Ju87B-2s of an unidentified unit over France, 1940.
(Author's collection)

HMS Gloucester. In an attempt to neutralise the Stukas' bases, a large force of warships set out from Alexandria but, as it sailed, it was spotted by patrolling aircraft of the Libyan-based II/St.G 2. During the attack which followed, the destroyer *HMS Nubian* was damaged and the carrier *HMS Formidable* so badly damaged that she had to be withdrawn from the area for repairs.

Stuka sorties against Royal Navy vessels covering the evacuation of Crete were equally successful; the destroyer *HMS Hereward* was sunk and the destroyer *Dido* and the cruiser *Orion* damaged. Oblt. Arnim Thiede of the 'Immelmann' *Geschwader* received the *Ritterkreuz* for his successful operations against shipping during the Crete campaign, and he was reported then to have sunk three freighters, scored a direct hit on a cruiser and damaged a destroyer and a light cruiser.

While the bulk of the *Stukagruppen* now massed for the forthcoming invasion of Russia, I/St.G 1, II/St.G 2 and I/St.G 3 remained in the Mediterranean theatre to support Rommel in North Africa. With little in the way of Allied defences to oppose them, the Stukas were able to operate freely during

the desert offensives and counter-offensives. In December 1941, *Luftflotte 2* arrived in the area with the *Ergänzungs* (training and replacement) *Gruppe* of St.G 1; and in March 1942 I/St.G 1 and II/St.G 2 were redesignated II and III/St.G 3 respectively to bring the *Geschwader* up to full strength. On 21 March III *Gruppe* moved to Biscari-San Pietro in Sicily, where it converted to the Ju87D-1; during renewed attempts to neutralise Malta, when crews often made three sorties per day, formations of about twenty aircraft set out with an entire *Gruppe* of fighters as escort. Eventually, demands for air support from North Africa reduced the strength of units operating against Malta and although small raids by single sections of dive bombers continued, they lacked adequate defensive covering fire and became easy prey for the defending fighters.

At the end of May 1942, III/St.G 3 too was recalled to North Africa and in June and July, when operations in support of the *Afrika Korps'* advance to El Alamein called for intense efforts, they again flew as many as three sorties a day, attacking troops, transport and tank concentrations, artillery

positions, airfields, stores and ammunition dumps. In early June the entire *Geschwader* made repeated attacks on the fortress of Bir Hacheim and, up until the time of its capture, many raids were directed against shipping and installations at Tobruk Harbour; but the long advance had exhausted German air and ground forces alike, and Rommel was halted at El Alamein. The now greatly reinforced Desert Air Force inflicted heavy losses, and in spite of close escort flown by the more experienced Luftwaffe fighter-pilots the Allied fighters invariably broke through the defensive screen. As in the Battle of Britain, the Stukas were too slow for the escort. One particularly notable success for the Desert Air Force occurred during the evening of 3 July when a formation of fifteen Stukas, heavily escorted by fighters, was intercepted over El Alamein. In the ensuing air battle the Allied fighters claimed all but two of the dive-bombers destroyed, some being chased back as far as their own airfield before being shot down. Final attacks against El Alamein extended the Luftwaffe to its limit with the result that sorties were considerably reduced due to natural attrition and combat losses.

BARBAROSSA

Achieving almost total surprise, German troops stormed into Russia at 0300 on 22 June 1941. The IV (*Stuka*)/LG 1, with 42 aircraft, was placed under the command of *Luftflotte* 5 in the far north for an attack against Murmansk, but the remaining *Stukagruppen* were subordinate to *Luftflotte* 2 which was to provide air support for Army Group Centre. II and III/St.G 1 (with 87 aircraft), I and III/St.G 2 (83) and II (*Schlacht*)/LG 2 (56 mixed Bf109s and Hs123s) were collected under VIII *Fliegerkorps* in the north of Army Group Centre's zone of operations, while St.G 77 (122) came under the control of II *Fliegerkorps* in the south. On the first day of the campaign the Luftwaffe attacked Russian airfields and destroyed no less than 1,800 aircraft, mostly on the ground. Any survivors were promptly dealt with by German fighters and the Stukas were again able to operate in skies virtually free of enemy opposition. St.G 77 bombed defences along the River Bug in support of Panzer Group 2, and the Stukas and ground-attack aircraft of VIII *Fliegerkorps* assisted

9. Engine test for a yellow-nosed Ju87B-2 of Hptm. Hubertus Hitschold's I/St.G 2 in the Peloponnese in May

1941, at the time of the great Stuka attacks on the Royal Navy in the Mediterranean. (Hans Obert)



10, 11. Stukas of I/St.G 1 and II/St.G 2 attack *HMS Illustrious* 100 miles west of Malta on 10 January 1941. 'As the Stukas pulled out of their dives, *Illustrious* appeared to vanish from sight in a great cliff of spray and water thrown up by the bursting bombs.' Hit six times and damaged by three near misses, the carrier was on fire, her flight deck wrecked, her steering gear crippled and her anti-aircraft guns out of action. (Author's collection)



9th Army and Panzer Group 3 to break through the border fortifications in east Prussia by bombing tanks, gun batteries and enemy transport. During the period from 22 June to the end of November, *Stukageschwader 77* recorded the destruction of 2,401 vehicles, 234 tanks, 92 gun batteries and 21 trains for the loss of fourteen pilots.

At the end of the first week of July, Army Group Centre's forces were converging on Smolensk and for several days the Stuka pilots flew against transport and tanks on the Moscow Highway between Smolensk and Minsk. Once Smolensk had been surrounded on 27 July, VIII *Fliegerkorps* moved north to assist in Army Group North's attack on Leningrad. During September I and III/St.G 2 carried out a number of attacks against the Russian Baltic Fleet in the heavily defended Kronstadt Harbour, during which the aircraft of Hptm. Dr. Ernst Kupfer (RK 23.11.41, EL 12.1.43, S 11.4.44) was shot up three times in succession; the third time Kupfer was so seriously wounded that it was thought he would not fly again. Oblt. Hans-Ulrich Rudel (RK, EL, S, Br, Gold EL) sank the battleship *Marat* with a direct hit on the ship's

magazine on 23 September, but a second attack resulted in the loss of Hptm. Ernst-Siegfried Steen (RK 17.10.41), the commander of III/St.G 2. Hit by flak, Steen deliberately tried to fly his crippled machine into the side of the heavy cruiser *Kirov*.

Even during these early days of the Russian campaign it became obvious that the use of bombs against tanks was most unsatisfactory. On 26 June the whole of St.G 2 had attacked a concentration of 60 tanks south of Grodno, but only one tank was knocked out and this was due to a lucky round of machine-gun fire. Although the impracticability of dive-bombing tanks was clear to the pilots themselves, it was only slowly appreciated by the Luftwaffe's policy-forming staff, a fact which was eventually to have far-reaching consequences, for one of the greatest German mistakes in the East was the failure to provide a step-by-step answer to the growth in Russian tank strength.

The potentially disastrous implications of this oversight were lost in the summer months of 1941, as the Germans drove ever deeper into Russia. The constant operational flying in support of the summer advances caused pilot fatigue, but the cam-



12. Major Walter Enneccerus, Gruppenkommandeur of II/St.G 2, over the Mediterranean in his Ju87R-2 coded T6+AC. On 26 May 1941, Enneccerus's Gruppe attacked and badly damaged the carrier *HMS Formidable*. On 17

March 1942 the Gruppe was re-designated III/St.G 3, and operated from Sicily against Malta from 21 March to 24 May. (US National Archives)

paign seemed to be going well and morale in the *Stukagruppen* was high. Although Russian fighters occasionally pressed home their attacks with great determination – some penetrated the fighter screen by diving down and ramming the Stukas – the greatest hazard so far encountered was the Russian flak. Often, as at Kronstadt, this was accurate and intense.

Meanwhile, in the far north, IV (*Stuka*)/LG 1 had been flying in support of German forces struggling towards Murmansk. During the opening stages of the drive the Ju87Rs bombed pillboxes forming the Soviet defences and then flew intensive operations for more than a week in support of

exhausted infantry who advanced over very difficult terrain and took Kandalaska; but here the advance faltered and petered out. Similarly, the northern thrust bogged down and the Stukas were again transferred, to support an offensive which ground to a halt outside Murmansk.

The first ominous signs of an exceptionally early Russian winter appeared on the Central Front in early October. Heavy rains turned the roads to mud and slowed the advance towards Moscow. As the temperature dropped the Luftwaffe was presented with all manner of technical difficulties and at the same time Russian resistance became increasingly stubborn. II/LG 2 and I/St.G 2, which

had recently begun converting to the Ju87D-1, were forced to break up an attack against their own airfield at Kalinin, and St.G 1 carried out numerous sorties against the Mozhaysk defence lines before Moscow. By 19 November forward German Army units were within nineteen miles of Moscow, but further progress was impossible. Russian counter-attacks threw back the worn out troops and a great deal of ground was lost before the front could be stabilised.

Meanwhile, attack and counter-attack in the far north exhausted both sides alike, and the Northern Front froze rigid. In February 1942 IV (*Stuka*)/LG 1 was redesignated and, under the command of Maj. Hans-Karl Stepp (RK 7.2.42, EL 27.4.44), became I/St.G 5. The unit frequently attacked installations on the Belomorsk-Murmansk railway, destroyed rolling stock and cut the branch lines running to various sectors of the front. Prolonged interruption of traffic proved impossible,



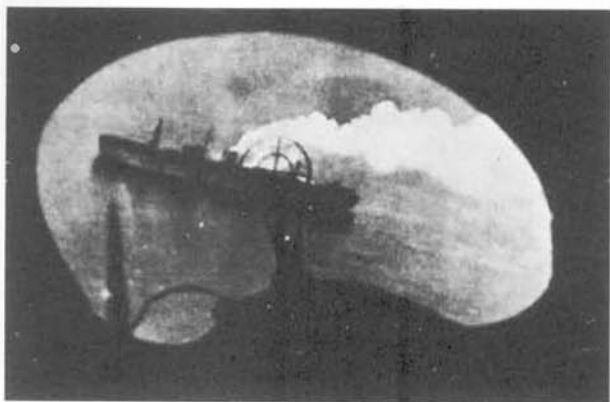
13. Stuka attack on the Tobruk trenches, seen from the gunner's position of a Ju87D of Major Kurt Kuhlmeys St.G 3. (James V. Crow)

however, and weather conditions finally forced the unit south to join St.G 1 under Oberst Walter Hagen (RK, EL 17.2.42), which had begun converting to the Ju87D-1 on the Leningrad Front.

NEW SQUADRONS, NEW TACTICS

As a result of experience in the Spanish Civil War and the subsequent success of the Hs123s during the Polish and French campaigns, a decision was taken in mid-1941 to expand the ground-attack arm of the Luftwaffe. It was intended that the principal item of equipment would be the Henschel Hs129, a heavily armed and armoured aircraft which had been in the process of development since 1937. Although the Luftwaffe had flatly refused to accept the early pre-production version in 1940, improved variants were subsequently developed and pressed into service with 4 Staffel of the first of the specialised ground-attack units, *Schlachtgeschwader 1*.

Originally equipped with the Hs123 and Bf 109E, I Gruppe of Sch.G 1 had been activated in Germany during January 1942. At the same time, II (*Schlacht*)/LG 2 was redesignated to form II/Sch.G 1; and in May the *Geschwader* arrived on the southern sector of the Eastern Front, where *Luftflotte 4* was to support an offensive into the Crimea to clear the Kerch Peninsula and take Sevastopol. The attack commenced on 8 May with simultaneous ground assaults and merciless dive-bomber attacks upon the deeply organised Russian positions by units of VIII *Fliegerkorps*. Russian fortifications were attacked by St.G 77 while Sch.G 1 strafed and bombed every movement in the enemy rear area until, with the exception of the fortress of Sevastopol, the Peninsula was secure. A Russian attack on Kharkov necessitated the removal of Sch.G 1, but the remainder of VIII *Fliegerkorps* took off at first light on 2 June and, led by St.G 77, struck at positions in the suburbs and city area of Sevastopol. Between 2 and 6 June a daily average of 600 sorties was recorded, imposing a considerable strain on pilots, ground personnel and machines alike. St.G 77 cut off the city water supply by destroying the pumping installations, reservoirs and electric



14, 15. Stuka attack on a convoy – diving, seen from the pilot's position, and climbing away, seen from the gunner's position. (Author's collection)

power station and attacks were also carried out against airfields in the Western Caucasus and on Black Sea ports to prevent the arrival of any aid for Sevastopol. Hptm. Herbert Pabst, who flew with *Stukageschwader 77*, gives his personal account of such a sortie against ports on the Caucasus coast:

'Out of bed at 0400 hours. A wash, coffee, one fried egg, and then into the cars to drive out to our planes. At top speed we fly eastward over the Crimea. Then the Kerch Peninsula: everywhere destroyed villages, burned-out vehicles, the terrain ploughed over by bombs, innumerable pits, trenches and other positions. Shortly before reaching Kerch we land at a forward airfield to refuel. Then we take off again, flying southward across the Black Sea, climbing higher and higher, with nothing around us but clouds and the sea below.

'Altitude 13,000 feet. Suddenly, punctually to

the minute the fighters are with us which are to escort us from here on. We are still climbing in a wide arc. We don our oxygen masks in order to remain wakeful and fresh. Below us nothing but water. Then the coast comes into sight and we see the port which is our target. With quiet engines up in the blue skies, we approach the target. Yes, there are the ships at the jetty! We set our dive brakes and adjust our sights.

'Our dive becomes steeper and steeper. Then they discover us and we see the muzzle flash of their anti-aircraft guns. Altitude 17,000, 13,000, 10,000 feet. Before us black puffs of anti-aircraft shells are bursting. I swerve my plane to the left to take shelter above a cloud and dive blindly through it. Then we are at 6,600 feet and I see again the jetty before me. Speed boats have started their engines and are dashing out to sea in wild curves. 1,100 feet! A large ship alongside the pier comes into my sights. I press my thumb. Now we level out and immediately our plane shoots upward at a sharp angle. The Russian anti-aircraft guns are firing wildly and blindly. I start to climb in a zig-zag course, then the flame of a bomb striking in the middle of the ships can be seen. Flying away towards the sea we can observe blood-red flames and black smoke rising at an angle with the wind. Flames and smoke of other explosions from hits on other vessels follow, made by squadrons which followed us.

'Our fighters drive off a few Ratas which have meanwhile taken to the air.'

On 7 June the Stukas maintained a constant series of attacks on Soviet artillery and positions in the line of advance. The deciding factor in the eventual victory of the German Army was the annihilating dive-bomber attacks on pin-point targets. Directed by reconnaissance aircraft, the Stukas plunged down into steep valleys to bomb firing positions at Inkerman. Soviet resistance in the city eventually collapsed on 1 July and the strongest military fortress in the world was in German hands.

Meanwhile II/Sch.G 1, which had been transferred to meet the Russian offensive against Kharkov, went into action at the beginning of June with new 30 mm MK 101 armour-piercing cannon. The newly introduced Hs129s played a significant part in the Kharkov battles, putting

many tanks out of action and causing panic among Soviet troops. In spite of this successful debut, however, difficulties with the aircraft's engines – particularly piston troubles and lack of spare parts, coupled with vulnerability and extreme sensitivity to the dust and sand of the south Russian steppes – drastically reduced the number of aircraft available for operations. In addition, proper training in the use of the cannon had been postponed and, left to their own devices, the pilots followed the wrong tactics of using up all their ammunition to set a single tank on fire; what mattered was that the shells, on penetrating the tank, should kill or disable the crew. The unit's armourers had not received any training in the maintenance of the cannon and, as a result, 4/Sch.G 1 had experienced so many defects that the MK 101s were dismantled and replaced by bomb racks.

A detachment of JG 51 was also operating the Hs129 at this time. *Panzer Jäger Staffel*/JG 51 was given the task of convincing flying personnel of the effectiveness of attacks on tanks if properly carried out. Between 11 August and 16 September, this unit's eight aircraft carried out 73 sorties, claiming 29 tanks during operations on the Moscow Front before taking advantage of a lull in active operations to carry out intensive training against dummy tanks. The whole *Staffel* reached a 60% average of hits, and successful firing practice against the heaviest types of Soviet tanks increased the

confidence of crews in the cannon. Exercises were also carried out with the army to ensure that air support would arrive as required at the scene of fighting.

On 16 December, a strong force of 250 Russian tanks broke through the Italian lines on the Don bend. Bombers and Stukas, together with II/Sch.G 1's Bf109s, failed to achieve any success, but six of 4/Sch.G 1's aircraft which had retained their cannon succeeded in destroying ten tanks in two days. Although this achievement was a valuable indication of what the cannon-carrying Hs129 could do, it was on too small a scale to affect the situation, and the unit fell back to Voroshilovgrad. By this time the strength of the unit had been greatly reduced by AA and infantry fire and no Bf109s were left. The anti-tank *Staffel* of JG 51 was therefore brought up from the Moscow front as a temporary means of restoring strength, and the arrival of this unit's trained personnel had a good effect on the pilots of II/Sch.G 1. While operating together between 1 and 16 January 1943, the two units each claimed to have destroyed thirteen tanks. After II/Sch.G 1 had received a few replacement aircraft it was again possible to detach the Pz.J.St./JG 51. During the subsequent Russian retreat from Kharkov to Voronezh, II/Sch.G 1 destroyed a further 23 tanks, and on 27 January it was withdrawn with only six serviceable aircraft to Kursk, where it was re-equipped

16. Henschel Hs129 badly damaged while on the ground. During operations, 75% of the Henschels shot down were

lost to direct hits on the engines by infantry fire. (Author's collection)





17. Oblt. Johannes Meinicke, Staffelkapitän of 1/Sch.G 1, awards the Frontflugsparange to Lt. Harang while a staff officer stands by to present a rusty bucket of wildflowers!

Meinicke, later awarded the Knight's Cross, was killed near Mutino, Russia, on 4 September 1943. (Author's collection)

with more cannon-carrying aircraft.

The growth in Russian tank production made the development of an anti-tank arm within the framework of the close-support organisation a matter of supreme importance. However, it was not easy to provide an aircraft sufficiently slow for accurate fire, and at the same time heavily armoured and yet with sufficient speed for low-level operations in daylight. Experiences with the Hs129 indicated that this aircraft was not the final answer to these problems, and in November 1942 the *Schlachtflieger* began to receive fighter-bomber versions of the Focke-Wulf Fw190, an aircraft with an air-cooled engine, considered a special advantage for ground-attack work since it could not be put out of action by hits in the cooling system. The machine possessed a high degree of manoeuvrability, its guns and cannon gave it a very heavy firepower, and its wide-track undercarriage permitted operations from relatively primitive forward airstrips.

TUNIS, ITALY AND FRANCE

As the first of the Fw190s entered service with the ground-attack arm, two new Hs129-equipped units were raised for operations in the Middle East and the first, 4/Sch.G 2, alternatively known as the *Schlacht und Panzer-fliegerstaffel 'Afrika'*, left Poland on 2 November with fourteen aircraft. At the end of the first week's operations from Starasat, however, only two aircraft survived and the unit's personnel, evacuated to southern Italy, were refitting at Bari when, in February 1943, the *Jabo-Staffeln* of JG 27 and JG 53 were amalgamated and equipped with Hs129s to form 8/Sch.G 2. This unit was more successful than its predecessor but could make no substantial or distinctive contribution to the Tunisian fighting. Based at the large airfield at El Aouina, 8/Sch.G 2 joined the Ju87s of St.G 3 and the Fw190s of III/SKG 10 (formed on 20 December by redesignating III/ZG 2).

During the British October–November offensive

from El Alamein, St.G 3 lost approximately 125 aircraft during 960 sorties mounted in support of the *Afrika Korps* against troop columns, tank concentrations and troop transport generally. Thereafter the number of Stuka sorties dropped, mainly due to low serviceability and the vital necessity of avoiding losses in view of the overall situation. Also, increasing use was now being made of the Fw190s in the ground-attack rôle and between 11 November and 11 February, III/SKG 10 claimed 449 vehicles destroyed and a further 196 damaged during 51 operations undertaken in a vain effort to stem the Allied advance. In January, however, III/SKG 10 lost about half of the 30 Fw190s transferred to Gabes when the airfield was heavily bombed by the RAF, and further losses occurred from extremely accurate AA when the unit attacked the airfield and harbour at Bone. From 10 November, battered Luftwaffe units encountered a new hazard when RAF Beaufighters from Malta made numerous night and day raids against the airfield at El Aouina, destroying hangars and setting workshops and parked aircraft alight. As the Allies closed in on the remaining Axis units in Tunisia, III/St.G 3 was badly shot up over El Guetter by newly-arrived American Spitfires on 3 April and had to be finally withdrawn to Sicily. The remaining Fw 190s could not redress a hopeless situation and on 12 May the North African campaign came to an end with the final surrender of German and Italian troops.

It then became apparent that an invasion of Sicily was imminent and towards the end of June, ground-attack forces in the area (III/SKG 10 and the Fw190 Staffeln of Maj. Wolfgang Schenck's Sch.G 2) were strengthened by the arrival from France of II and IV/SKG 10; both had previously been extremely active and successful in low-level daylight attacks against targets along the south coast of England.

The invasion of Sicily opened on 10 June 1943, and although bombing of German airfields had caused heavy losses Sch.G 2 and SKG 10 were committed to opposing the invasion force, attacking troops and vehicles as they poured ashore. Losses were catastrophic and after four days the remnants of these decimated units were withdrawn to Italy, Sardinia and Corsica. SKG 10's *Kommodore*

was killed on 15 July when the engine of his Fw190 failed during take-off from Reggio, and II *Gruppe's Kommandeur*, Helmut Viedebannt (RK 30.12.42) took temporary command until the arrival of Maj. Schumann.

Sicily was completely overrun by 17 August and on 3 September the British 8th Army made a diversionary landing on the toe of Italy in preparation for the main assault at Salerno six days later. By this time I/Sch.G 1 had left for the Eastern Front, and in the remaining units some 60% of the ground crews were suffering from malaria. The resultant reduction in serviceability was such that during October II/Sch.G 2 and II and III/SKG 10 were compelled to operate under a single *Stab* in order to make up a sizeable force, and with the reorganisation of the ground attack forces (see Table 2) this composite unit formed the basis of SG 4.

During December the Allied flak grew too concentrated and intense for ground strafing and although losses over the target were reduced by carrying out high-speed dive attacks, constant Allied fighter patrols often broke up the German formations. Maj. Brücker, the *Geschwader's* new *Kommodore*, personally led nineteen sorties during this period, in eighteen of which he was intercepted. Consequently, operations fell off as the bomb-laden Fw190s had to be escorted by a far greater number of their own fighters. On 19 December a determined



18. Oblt. Meinicke (left, with Ritterkreuz) during Schlachtgeschwader 1's operations near Smolensk in late 1942. (Author's collection)

effort was made against US 5th Army positions by between 30 and 35 Fw190s escorted by 60 to 65 Bf109s. This was followed on the morning of the 28th by 20 to 25 Focke-Wulfs, again escorted by about 60 Messerschmitts, which appeared over the central sectors of the battlefield; and on 30 December a small formation of Fw190s bombed troops and motor transport concentrations near Minturno. Thereafter, sorties again fell off as III/SG 4 left the fighting in Italy to refit and retrain in France.

On 22 June 1944 the Allies landed behind the German lines at Anzio. The landings were preceded by heavy bombing raids which left SG 4 with only about 30 airworthy machines. As these were pulled back to airfields north of Rome to prevent further losses they could not immediately oppose the landings, but the Germans reacted

quickly and by the end of the first day an estimated total of 100 sorties, flown by small groups of four to five aircraft from I and II/SG 4, appeared over the beach-head. Shortly afterwards, during a period of relative quiet, the two *Gruppen* were withdrawn from Viterbo to Piacenza in order to allow some of the units' pilots to do some more training; unit losses sustained during the early months of 1944 were such that SG 4 alone absorbed some 50% of the total output from the *Schlachtfliegerschule*; i.e. between 30 to 60 pilots per month. Further reinforcements arrived in the form of 14 (*Jabo*)/JG 5, which had been operating with considerable success in the Arctic Circle; it was redesignated 4/SG 4, and its commander Hptm. Friedrich-Wilhelm Strakeljahn (RK 19.8.43) became the *Kommandeur* of II/SG 4.

At the end of May the *Geschwader* went into

19. Major Günther Tonne (wearing Ritterkreuz), the Kommodore of Schnellkampfgeschwader 10 from its formation, with pilots of I/SKG 10 on the Channel front in 1943. The Fw190A-4/U8 in the background bears the black triangle Gruppe marking ahead of the fuselage cross and a white individual letter aft: II Gruppe aircraft bore these markings reversed. (This system was also used on Hs129s of Sch.G 1 and Sch.G 2: and on the night-flying

Ju87Ds of 'Gefechtsverbände Hallensleben' in the West, when the position of the triangle identified NSGr.1 and 2.) By mid-June 1943 only I/SKG 10 remained in France, the remainder of the unit being transferred south to oppose the Allied invasion of Sicily. Tonne died when the engine of his Fw190 failed on take-off at Reggio on 15 July. (Hans Obert)





20. Front view of a yellow-nosed Hs129B-1/R2, showing the 30 mm MK 101 cannon beneath the fuselage. During the Soviet advance of November 1942 pilots of 8/Sch.G 1 often went into action without proper training for anti-

tank cannon attacks, and losses were heavy. Shortly afterwards the Anti-Tank Staffel of Jagdgeschwader 51 was attached to II/Sch.G 1 with beneficial results. (Author's collection)

action again, but with total lack of success, in the ground-attack rôle, losing the new *Kommodore*, Maj. Georg Dörffel during an attack north-west of Rome. In June, however, I *Gruppe* under Maj. Dörnbrack operated for a while with tremendous success as fighters against low-level intruders, claiming 27 of these shot down without loss to themselves; but experience had shown that it was virtually impossible to operate the *Schlachtflieger* in the West. Consequently, plans to transfer two unspecified *Schlachtgeschwader* to the West immediately after D-Day were cancelled and I and II/SG 4 were withdrawn to northern Russia, being joined by Maj. Weyert's III *Gruppe* from Normandy after only a fortnight's participation in the battle against the invasion.

As the only ground-attack unit with operational experience in the West, SG 4 was taken off the Eastern Front in October and, in preparation for the German counter-attack in the Ardennes,

went into training in radio-controlled bad-weather flying, this being seen as the only practical method of keeping down losses on daylight operations. However, the weather prior to the offensive was too bad even for this type of training and SG 4 was not only inexperienced in this type of sortie, but was still in the process of assembling at its designated airfields when the offensive opened on 16 December. In spite of Göring's promises to the *General der Schlachtflieger* that JG 2 would be specially devoted to escorting SG 4 during the offensive, this escort frequently did not materialise and SG 4 was therefore compelled to provide its own escort. Attacks were carried out in the Bastogne area and against Elsenborn airfield, but from the start losses were disproportionately high, chiefly from fighters.

On 1 January 1945 the Luftwaffe launched 'Bodenplatte', its all-out assault against Allied airfields in Holland, Belgium and Luxembourg.

All three *Gruppen* of SG 4 took part but only the *Stabsstaffel* and a few other aircraft made the rendezvous. Those aircraft which pressed on encountered heavy flak over the front line and four of III/SG 4's aircraft were shot down, including that flown by the *Geschwader Kommodore* Obstlt. Alfred Druschel. Thereafter, the whole unit was transferred to the East to meet the Russian January offensive.

In addition to the *Nachtschlachtgruppen*, a number of other specialised ground-attack units operated in the West during the final stages of the war. I./SG 5 was redesignated in November 1944 to form III/KG 200 and after night-flying training at Staaken the unit arrived at Twente in early February, joining *Sonderstaffel Einhorn*, an operational training unit formed to operate in the anti-shipping rôle with heavy calibre bombs, and Maj. Dahlmann's NSGr.20, the redesignated III/KG 51, which had itself been formed from the remnants of

I/SKG 10 after heavy fighting in Normandy.

During March, all three units mounted day and night sorties against bridges and suitable targets around the bridgeheads, principally at Nijmegen and Remagen. Here they joined the Ju87s of Maj. Rohn's NSGr.2 which had been operating in Holland, Belgium and NW Germany with Hptm. Wilburg's NSGr.1 under the joint designation '*Gefechtsverband Hallensleben*.' Flying on nights of good visibility yet sufficient cloud cover, '*Gefechtsverband Hallensleben*' concentrated its attacks in mid-March against Allied transport columns, easily visible by their headlights, in the Remagen bridgehead, and although a number of aircraft were lost to Allied flak and night fighters, overall operational losses were low. However, on 14 March NSGr.2 suffered a major setback when American P-47s discovered its well-hidden base at Lippe. A number of the *Gruppe*'s aircraft were standing out in the open and the hour-long attack destroyed the



21 Formed from JG 27 and JG 53 personnel, 8/Sch.G 2 became operational on the Hs129 in February 1943 under Fliegerführer Tunis: this photo shows one of the unit's

aircraft near Tripoli – note green-on-sand 'scribble' camouflage. By July 1943 the Staffel was in Russia, taking part in Operation 'Zitadelle' at Kursk. (Author's collection)

airfield buildings, crews living quarters and fourteen aircraft, leaving Lippe virtually useless.

At Remagen, all possible methods of destroying the bridge were tried and eventually a number of NSGr.20's pilots who had lost everything in the war – their families and all their possessions – volunteered to crash their Focke-Wulfs onto the bridge with a bomb on board. However, this method was not practicable as with standard fusing the bomb only became live a certain time after being released. A new type of fuse was manufactured during the last weeks of the war, but by that time even suicide missions could not alter the eventual outcome of hostilities and no such methods were ever employed.

LATER CAMPAIGNS IN THE EAST

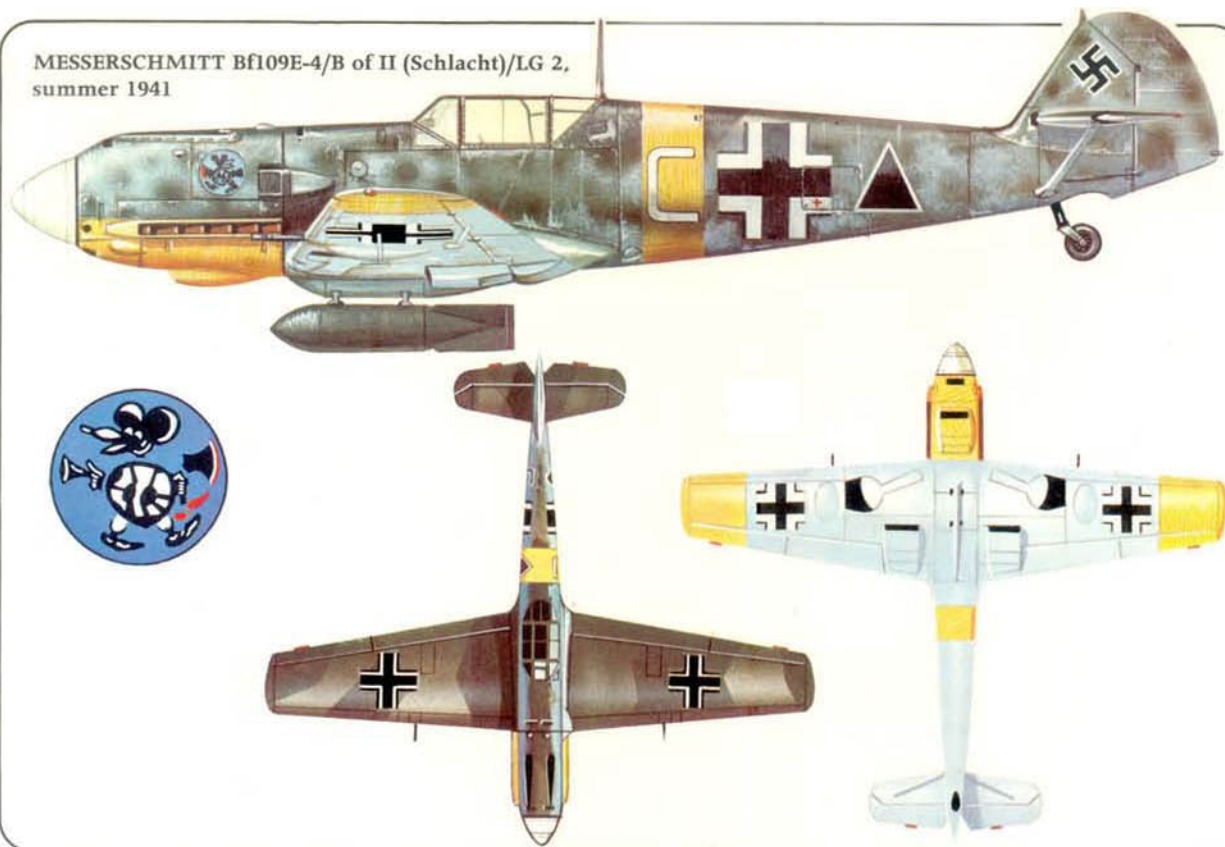
On the Eastern Front, the first large assault against Stalingrad was launched in September 1942. *Stukagruppen* from St.G 1, St.G 2 and St.G 77 were heavily committed in attacks synchronised with ground operations and aircrews, forbidden to release their bombs until they had firmly established the exact position of their own troops, flew four or more sorties daily over the city. Russian fighter opposition to these raids was largely ineffective and was only pressed home when the formations met over the Russian-held part of the city. Flak caused the greatest number of casualties, but the anti-aircraft guns often used up all their ammunition during the Stukas' morning attacks as fresh supplies could only be brought up at night. Bridges over the Don carrying reinforcements were bombed to destruction by St.G 2, but they were soon replaced by pontoons, and after a short delay maximum traffic was again reinforcing the city.

German troops were still engaged in bitter hand-to-hand battles amid the rubble when, on 19 November, the Russians launched a counter-attack timed to coincide with the onset of the winter freeze. Many German aircraft were iced up and thick patches of fog further prevented a major attack, but the more experienced crews from St.G 2 were ordered off from Karpovka and at Kalatsch the Fw190s of II/Sch.G 1 under Maj. Alfred Druschel (RK 21.8.41, EL 3.9.42, S 20.2.43)

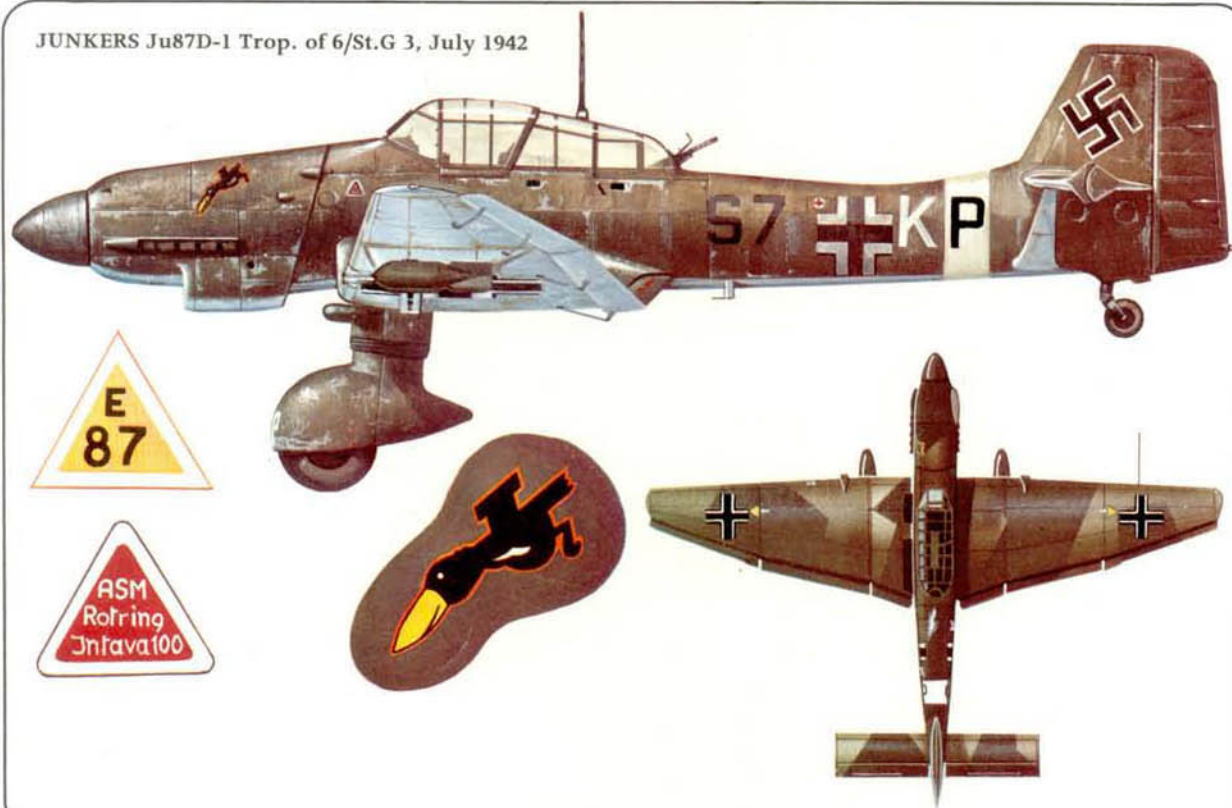
BELOW: Feldwebel Stuka pilot in flying clothing, 1940. He wears the lightweight fawn canvas summer flying helmet with brown bakelite earphone housings. The tan canvas flying suit, worn at this period by bomber and Stuka crews, has a diagonal zip fastener which gives the suit a caped effect on the right shoulder. There were two types of lifejacket in use by Stuka crews at this time: the fighter pattern illustrated – note compass strapped to air tube – and the ribbed kapok type usually worn by bomber crews. A rank patch bearing three stylised white wings on a brown background is worn on the upper arms. The blue Other Ranks sidecap is stuffed in the thigh pocket, with white thread Luftwaffe eagle badge and black-white-red national cockade. The flying boots have black suede legs and black leather feet and straps.



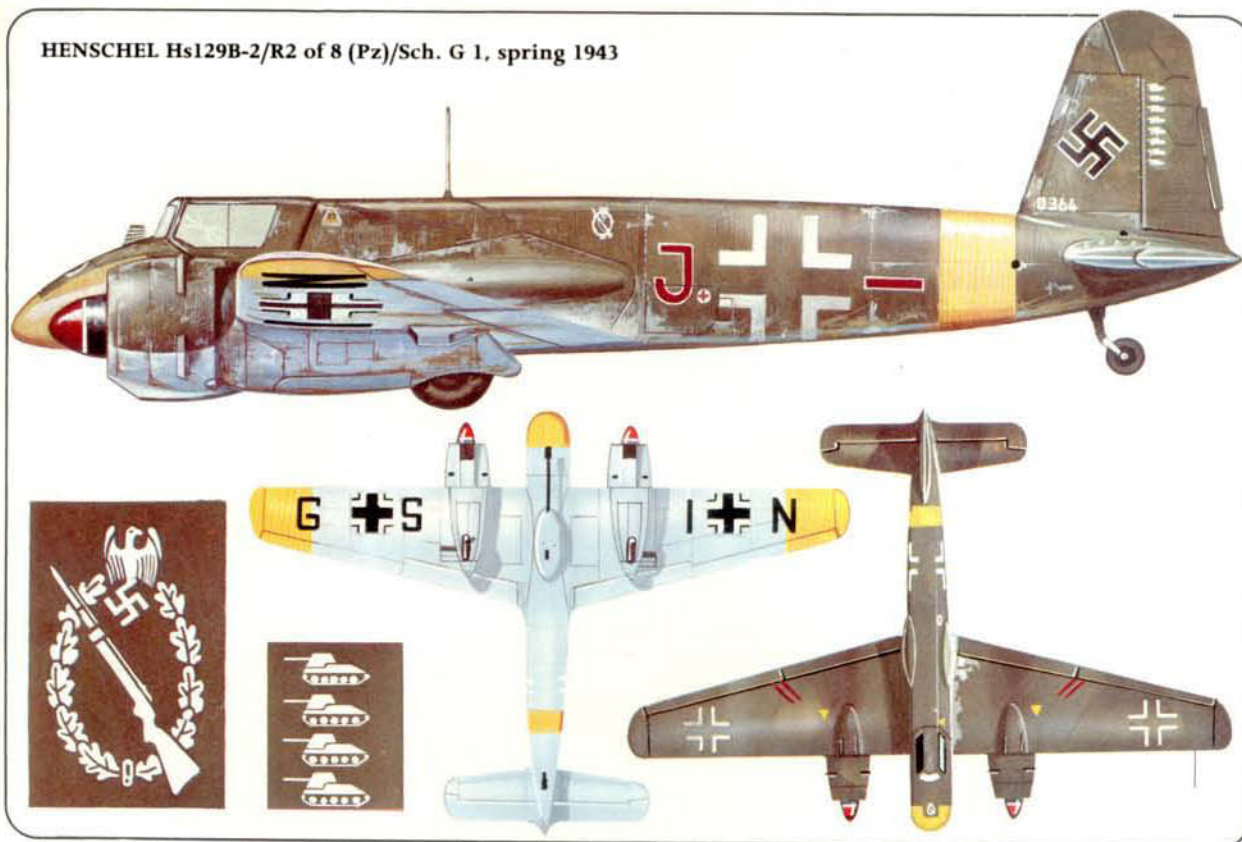
MESSERSCHMITT Bf109E-4/B of II (Schlacht)/LG 2,
summer 1941



JUNKERS Ju87D-1 Trop. of 6/St.G 3, July 1942



HENSCHEL Hs129B-2/R2 of 8 (Pz)/Sch. G 1, spring 1943

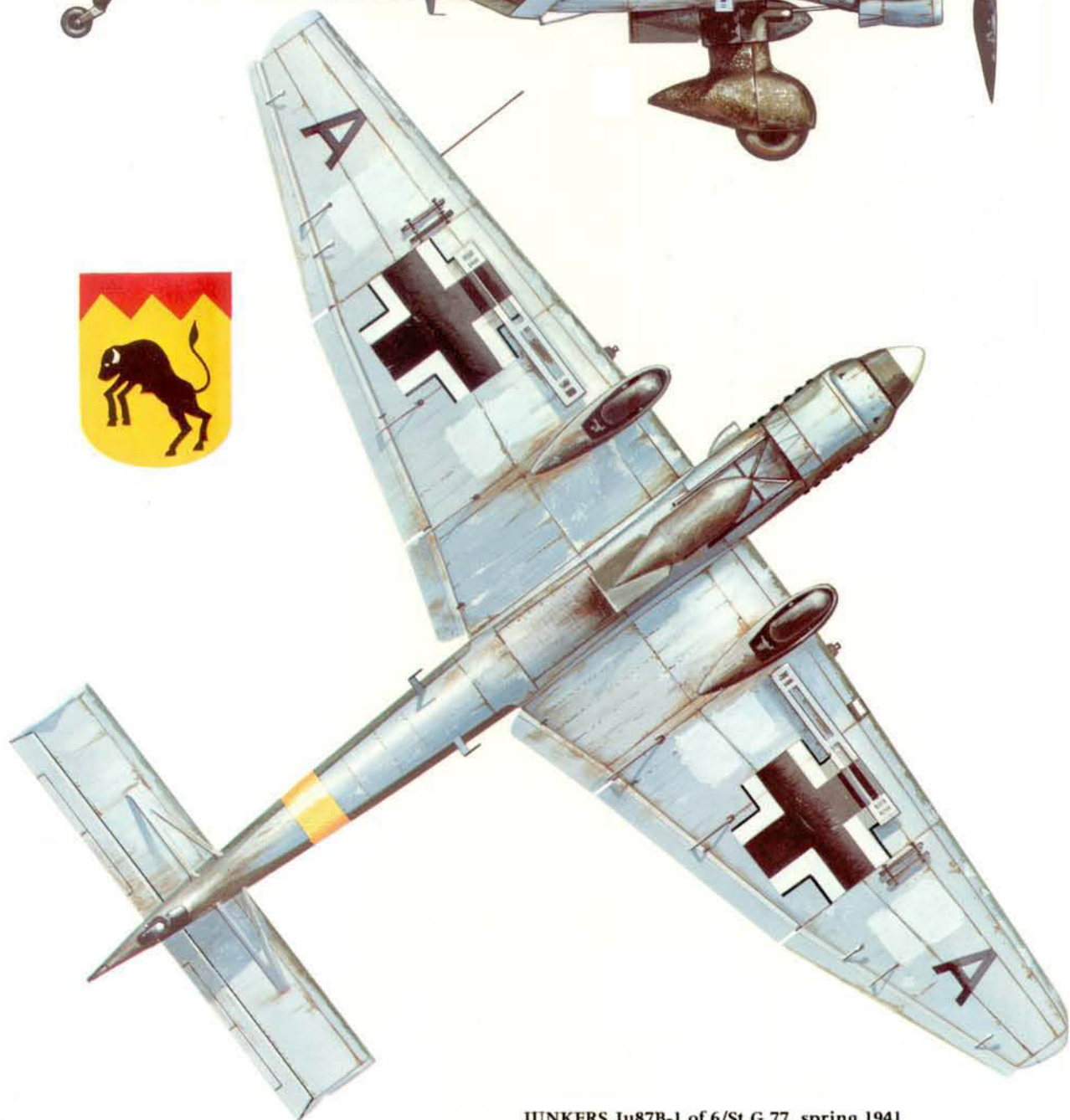


OPPOSITE, TOP: Messerschmitt Bf109E-4/B flown by Willi Tritsch of II (Schlacht)/LG 2, Russia, summer 1941. The wings are camouflaged in a splinter pattern of shades 70 and 71, which also appear along the fuselage spine, fading off in soft sprayed patches on the sides. This meeting of this mottled camouflage and the blue, shade 65, of the undersides is further obscured by patches of the grey-green shade termed 'RLM-Grau'. The yellow areas are an indication of the Russian theatre. The white 'C' is the individual aircraft code, the triangle of black a Gruppe symbol. Note that their positions are reversed on the starboard side. The Mickey Mouse emblem of the Gruppe appears on both sides of the cowling; note that the close-up view shown is the starboard presentation – the mouse always faced the tail of the aircraft.

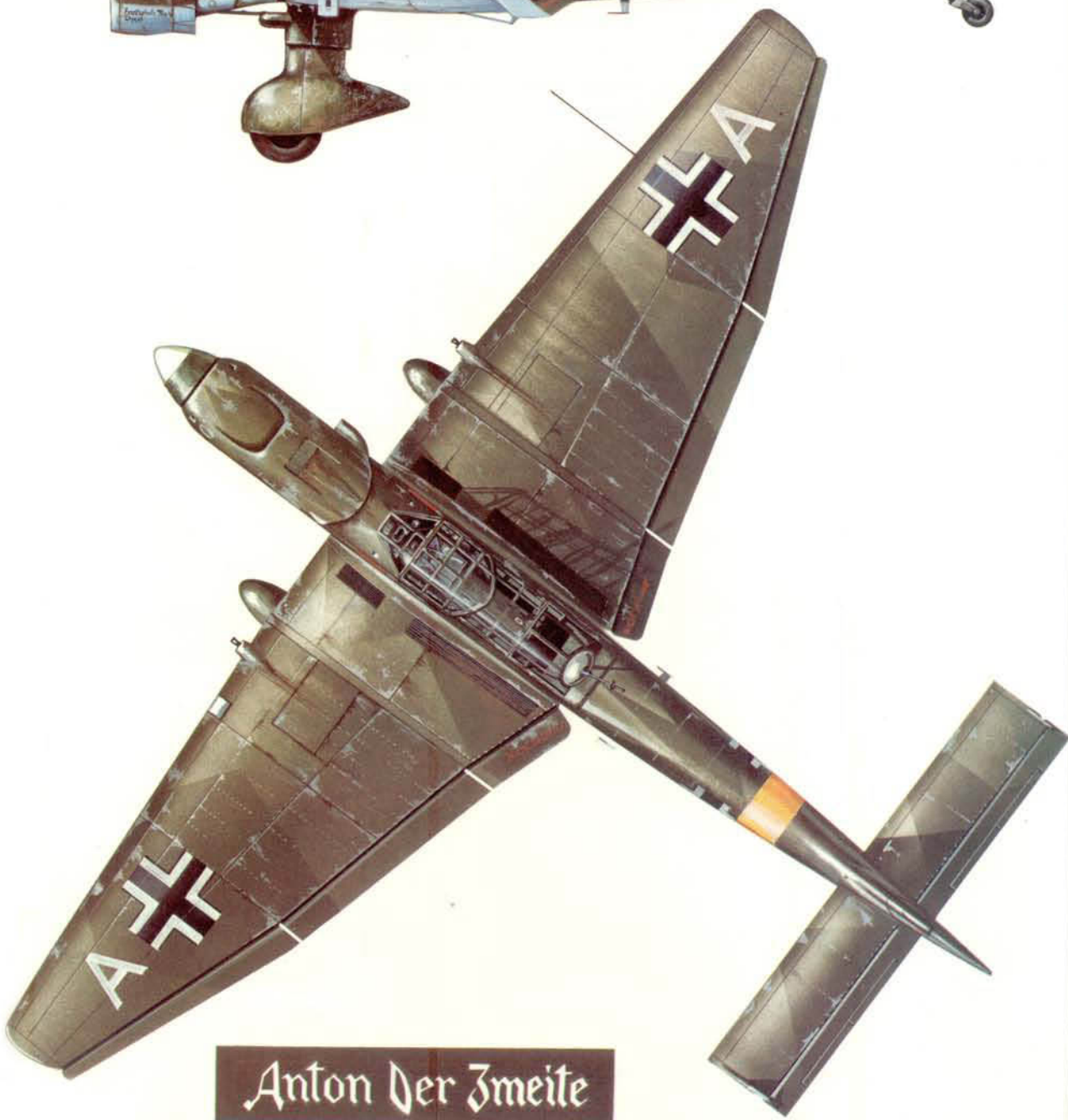
OPPOSITE, BOTTOM: Junkers Ju87D-1 Trop. of 6/St.G 3, operating in the Western Desert, July 1942. The upper surface splinter scheme of shades 70 and 71 is very weathered, with poor definition, but the factory scheme is illustrated on the upper view. The white fuselage band is the theatre marking for Africa, Mediterranean, and South Russia. The Geschwader code S7 appears on the left of the fuselage cross on both sides, followed by the individual aircraft letter

K, and the 6 Staffel code, P. The diving raven emblem, retained when I/St. G 1 was redesignated II/St.G 3 in March 1942, appears on the port side only. The two filler triangles appeared low on both sides beneath the cockpit (yellow, E87) and in the position shown on the port side only (red, white lettering). Bombs were painted RLM-Grau.

ABOVE: Henschel Hs129B-2/R2, Werke Nr. 0364, flown by Rudolf-Heinz Ruffer, Staffelkapitän of 8 (Pz)/Sch.G 1 in the Kuban area of Russia, spring 1943. The aircraft is finished in badly weathered splinter pattern of shades 70 and 71, with blue 65 undersurfaces and yellow Russian theatre markings. 'J' is the individual aircraft code, and the horizontal bar, always to the rear of the fuselage cross, is the II Gruppe emblem within the Geschwader. Note the rendering of the Infantry Assault Badge on top of the nose and above and left of the 'J' on the fuselage; this symbolised the close comradeship between infantry and ground-attack aircrews. The patch views illustrate this, and the row of destroyed tank victory tallies on the rudder. For some reason the factory call-sign markings, GS-IN, are retained below the wings. These should have been painted out on delivery to an operational unit, but are occasionally observed on fighting aircraft.



JUNKERS Ju87B-1 of 6/St.G 77, spring 1941

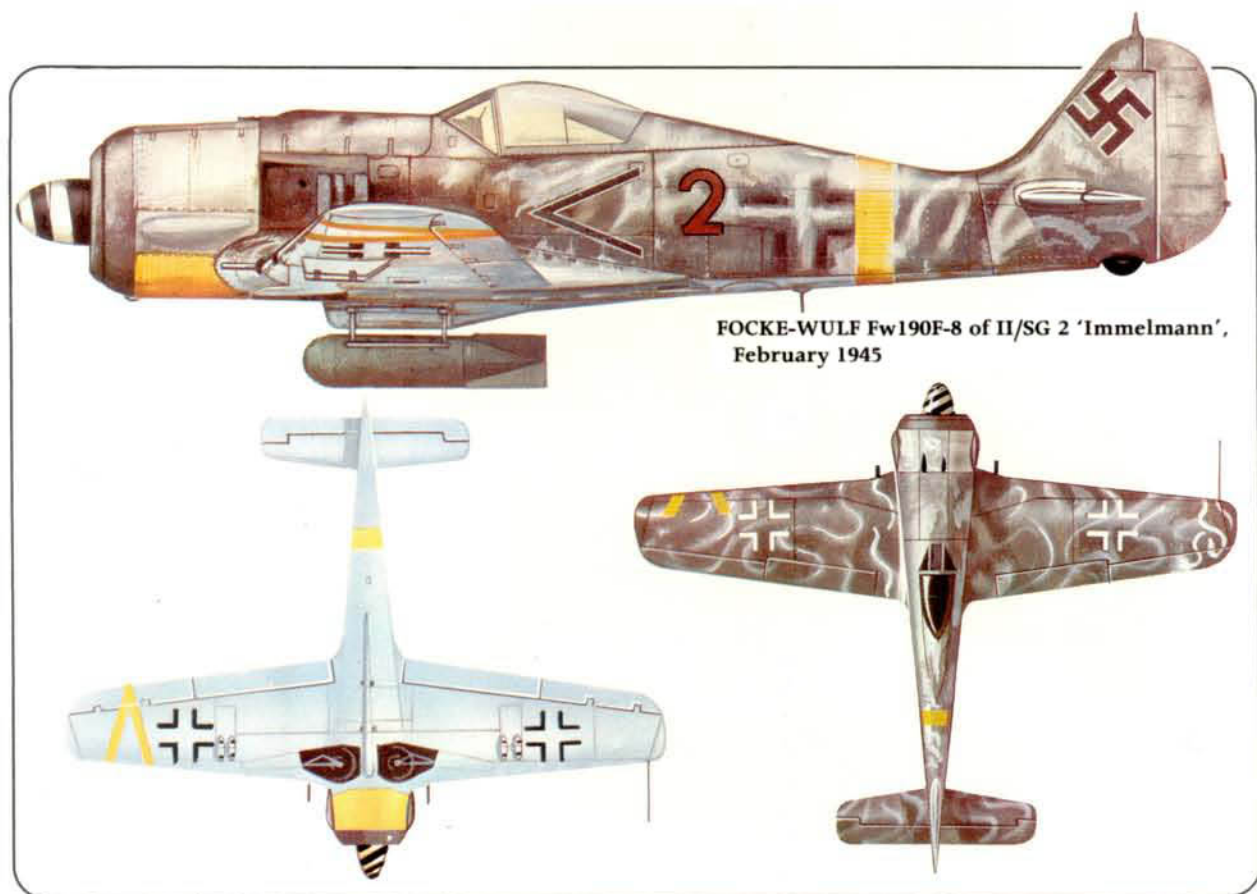


Anton Der Zmeite

PAGES 28–29: Junkers Ju87B-1 of 6/St.G 77 operating in the Balkans, spring 1941, under control of Geschwader Kommodore of St.G 3, in support of German Second Army. The standard splinter scheme of shades 70 and 71 is badly weathered; and note areas under wings where factory call-sign has been overpainted. The Geschwader code S2 appears on the left of the fuselage crosses, followed by the individual letter A and the 6 Staffel code P. In this case the yellow of the A is the code-colour of the third Staffel in each three-Staffel Gruppe, while the yellow band and wingtips are a theatre marking. The individual letter is repeated above and below the wingtips. The Staffel emblem of 6 Staffel, a bull on a shield of yellow with an upper area in Gruppe code-colour (red, for II Gruppe) appears on both sides below the windscreen, while an individual aircraft name 'Anton Der Zweite' – 'Anton the Second' appears in white on the port cowling only. The propeller blades and spinner are dark green, shade 71, but the spinner has been given a white tip at unit level.

BELOW: Focke-Wulf Fw109F-8 flown by Gruppe Adjutant of II/SG 2 'Immelmann' in Hungary, February 1945. The two-tone grey scheme in shades 74 and 75 is overpainted with streaks of winter white camouflage. The cowling ring is in shade 74, and the yellow under-pan and fuselage ring are the usual Russian Front theatre marking. The red '2' is the individual aircraft marking; the chevron on fuselage sides and port wing indicates Gruppe Adjutant. The black and white spiral motif was a very common spinner marking in the latter half of the war; propeller blades would have been in green, shade 70. Note bottom section of wheel covers removed; and RLM-Grau bomb container ETC 250.

OPPOSITE, TOP: Selection of unit emblems: (A) 7/St.G 77, both sides of Ju87 (B) 4 (Pz)/Sch.G 1, both sides of Hs129B-2/R2 (C) Störkampfstaffel 6 (D) Personal marking on Ju52/3m transport of General der Schlachtflieger, left only (E) 4/St.G 77, both sides of Ju87 (F) 5(Schlacht)/LG 2, both sides Hs123 (G) 7/St.G 1, both sides of Ju87.



FOCKE-WULF Fw190F-8 of II/SG 2 'Immelmann', February 1945

A



B



C



D



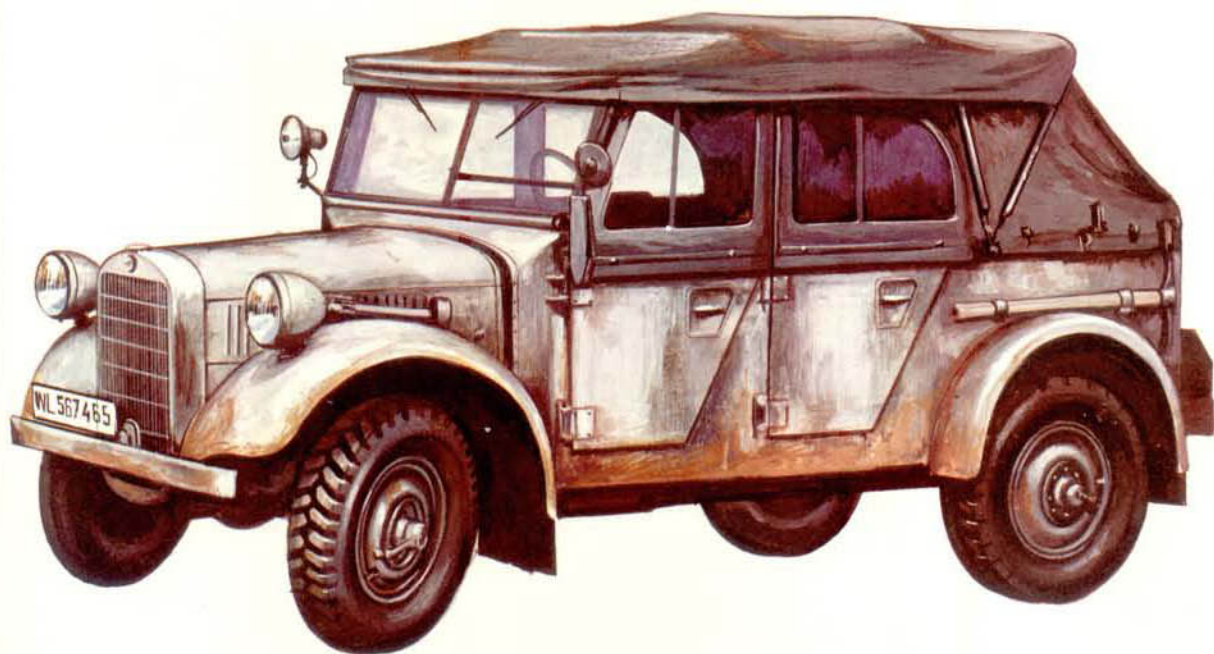
E



F



G



Kfz 2/40 light car, used as squadron hack by 3/SG 1,
Russia, winter 1943–44



Oberleutnant Stuka pilot, St.G 2 'Immelmann', 1943. He wears normal service dress with peaked cap; the collar of the tunic and the seams of the cap are piped silver, indicating officer rank, and the cap has silver cords for the same reason, and silver woven badges. The silver epaulettes, with one gold pip indicating rank, are backed with yellow, indicating aircrew; the silver-piped collar patches are the same colour, and bear the two stylised wings and single oak spray of Oberleutnant. A unit cuffband on the right sleeve bears the title *Geschwader Immelmann*. The Luftwaffe eagle is worn in silver on the right breast; and the Ritterkreuz hangs from its ribbon at the throat. On the left breast are the gold mission clasp, the Iron Cross 1st Class, the pilot's qualification badge in silver, and a black wound badge. The ribbon of the Iron Cross 2nd Class is worn in the buttonhole, and the German Cross is worn on the right breast.

Unteroffizier, 1942, in normal service dress at the front. He wears the fly-fronted 'flight blouse' much favoured by Luftwaffe personnel as an informal service dress, with sidecap, service dress trousers, and marching boots. The silver braid round collar and epaulettes, and the single wing on the collar patch, indicate Unteroffizier rank. The red piping to the epaulette and collar, and the red backing of the patch, indicate, in this case, armourer branch; and an armourer's trade badge of crossed rifles is worn on the left forearm. He wears a Luftwaffe long service medal ribbon in blue, with miniature eagle, and the War Merit Cross with Swords – black edged white and red, with bronze crossed swords. The ubiquitous Luftwaffe eagle, in white thread, appears on the right breast.



Table 1 Re-designations, 1.5.1939

I, II & III/St.G 163 (code 35+) , became I, II & III/St.G 2 originally I, II & III/St.G 162

(code 23+)

I, II & III/St.G 165 (code 52+) became I & II/St.G 77 & III/St.G 51

I/St.G 167 (code 71+) became I/St.G 1

I/St.G 168 (code 81+) became I/St.G 76

scrambled for bombing and strafing attacks. Nevertheless, the Russians succeeded in closing the ring around Stalingrad during the night of 22 November, and as they strengthened their grip, Luftwaffe units were forced to operate in defence of their own threatened airfields. Forward airfields between the rivers Chir and Don were abandoned, and at Oblivskaya St.G 2 and Oberst Hubertus Hitschold's Sch.G 1 attacked infantry, cavalry, artillery and tanks on the very edge of their runways. Ultimately Oblivskaya had to be evacuated, and the Stuka and ground-attack units retreated in great confusion to Morovskaya, an airfield vital to the Stalingrad airlift. This, too, was captured, and

with the 6th Army completely isolated its fate was a foregone conclusion. On 2 February, German resistance in the Stalingrad pocket ceased.

The battle to encircle Stalingrad left the Russians in a strong position to advance, and aerial anti-tank defence became vital in areas of weak resistance or where unfavourable terrain or bad roads prevented German ground defences from engaging tanks which had broken through. The timely arrival of the *Schlachtflieger* often reversed an otherwise hopeless situation and there developed a strong bond of camaraderie between the German soldiers and the *Schlachtflieger*. An example occurred on 2 January, when some *Schlachtflieger* on a 'free hunt' around Woroschowgrad-Millerwo noticed Russian tanks and infantry attacking a small group of German troops enclosed in the village of Antonowka. After a number of tanks had been destroyed by the aircraft the remaining tanks and infantry fled, but one of the pilots was shot down and, after a lucky emergency landing, managed to



22 Blurred but rare photograph of a Stuka 'scramble'. White-painted Ju87D-3s, almost certainly from St.G 2 'Immelmann', take off from a Russian airstrip, winter 1942-43. The staggered line abreast formation avoids the

clouds of loose snow blown up by each aircraft blinding the next pilot. The Bf109s in the foreground are probably from JG 52. (Author's collection)

Table 2 Re-organisations, October 1943

St.G 1 became SG 1

St.G 2* became SG 2

St.G 3 became SG 3

Fw190 Staffeln,

II/Sch.G 2 became I/SG 4

II/SKG 10 became II/SG 4

Fw190 Staffeln,

I/Sch.G 2 became III/SG 4

I/St.G 5 became I/SG 5

Führer der Pz.Jäger became Stab IV(Pz)/SG 9

4 & 8/Sch.G 1 became 10 & 11(Pz)/SG 9

4 & 8/Sch.G 2 became 12 & 13(Pz)/SG 9

Pz.Jäger Staffel/JG51 became 14(Pz)/SG 9

III/SKG 10 became I/SG 10

IV/SKG 10 became II/SG 10

St.G 77* became SG 77

*The Fw190-equipped Staffeln of I/Sch.G 1 probably integrated with II/SG 2, and those of II/Sch.G 1 with II/SG 77. Luftwaffe Order of Battle, 20.10.43 mentions Ju87 units 'II/St.G 2 (Pz)' and 'II/St.G 77 (Pz)' in addition to Fw190 units II/SG 2 and II/SG 77.

stagger across to the relieved German troops:

'Wounded men, dressed only in makeshift bandages, dragged themselves over to give him their hand in thanks. The leader of the troops, an old Oberst, wanted to offer him something but the whole group did not have a single cigarette between them.'

Before spring thaws brought movement on the ground to a standstill, Russian attacks and German counter-attacks resulted in the front forming a large bulge of Russian territory around Kursk. The German effort to seal off this bulge under the code name Operation 'Zitadelle' was to be their last large-scale offensive in the East. *Stuka* and *Schlachtverbände* collected in the area included St.G 1 under Obstlt. Pressler (RK 7.2.42, EL 28.1.43); Oberst Dr. Kupfer's St.G 2; St.G 77 under Obstlt. Helmut Bruck (RK, EL 21.2.43); III/St.G 3; and the Hungarian dive-bomber unit 102/1 – all equipped with the Ju87D – and the Fw190s of Hirschold's Sch.G 1. In addition, the Hs129s of 4 and 8/Sch.G 1, together with 4 and 8/Sch.G 2 (newly arrived from the Mediterranean) were operating under the command of Hptm. Bruno Meyer (RK) and the first Ju87Gs were in service with special anti-tank units attached to St.G 1 and St.G 2.

These anti-tank units had been formed from an



23. Hptm. Kurt Lau of the 'Immelmann Geschwader', awarded the Knight's Cross on 6 April 1944 while with I/SG 2. He force-landed behind Russian lines in 1945 and was posted missing. (Hans Obert)

experimental unit (*Versuchskommando für Panzerbekämpfung*) sent to the Eastern Front during the previous February. From mid-1942 the Russians had begun to deploy increasingly large tank units with excellently armoured equipment, and with most tank factories located beyond the range of German bombers it was necessary to destroy the tanks under exceedingly heavy fire and with consequent heavy losses on the battlefield. Large calibre high-explosive bombs were effective only if they exploded within twelve feet of the target and

immediately above ground, for penetration into the ground channelled the blast upwards instead of sideways. Smaller bombs were under development which could be scattered over concentrations of tanks; but in 1943 the 37 mm BK 3, 7 Flak 18 cannon seemed to be the best anti-tank weapon available, and this was experimentally installed, either singly or in pairs, beneath the Bf110, Ju88P and Ju87D. Both the Bf110 and Ju88 proved not only unwieldy in the air but extremely vulnerable to ground fire, and the folly of operating these types in the anti-tank role is well illustrated by the experience of the bomber *Gruppe III/KG 1* which, operating the Ju88P on the Eastern Front in April 1943, was completely wiped out.

Although speed and manoeuvrability were both drastically affected, the Flak 18-equipped Ju87 conversion seemed to be the most promising, but the experimental unit arriving in the Crimea during

the spring of 1943 initially met with little success. Often the cannon were removed and replaced by bomb-racks; but a few officers realised the potential of the new weapons and, as operational trials continued, new tactics were slowly evolved.

'Zitadelle' opened at 0300 hours on 5 July 1943. Unit commanders had been informed that the breakthrough of the relatively weak German troops depended on the effect of the first air attacks and every aircrew was urged to do its best. At first light III/St.G 1 under Maj. Lang (RK 23.11.41, EL 30.11.42, S 4.7.44) attacked gun emplacements on the fringe of a wood while other Ju87 units struck at Soviet communications and supply routes and blasted breaches in the enemy defences. The Hs129 units were directed mainly against enemy tanks, and the Fw190s flew in at 2,100 feet to drop SD 1 and SD 2 bomb containers which, opening a few feet above the ground, scattered large numbers



24. Summer 1942: 7/St.G 1 over the northern sector of the Russian Front. In May 1943 the Staffel, led by Hptm. Stoll-Berberich, transferred to Schatalowka West for unofficial

Fw190 conversion, but this 'private' course had to be called off by order of higher authority. (Author's collection)

of 'splinter' bombs among the enemy positions. As Russian fighter attacks were warded off by German fighters the greatest menace to the dive-bombers was the flak, while Fw190 and Hs129 units had to brave a hail of fire from Russian soldiers who blazed away at the low-flying aircraft with rifles and machine-guns. Concentrations of Russian armour provided ideal targets for Hptm. Rudel's lone Ju87G, and by the end of the first day he had singlehandedly destroyed twelve tanks. As a result of this sudden success the aircraft of the experimental unit were called up from the Crimea

and placed under Rudel's command.

On 6 July almost 850 Stuka sorties were mounted, and in one attack on the 7th, 64 Soviet tanks were hit and set on fire. The four Hs129 *Staffeln* under Hptm. Bruno Meyer had only recently returned from Germany where they had been fitted with the MK 103 30 mm cannon. This possessed greater penetrating power than the earlier MK 101 and, operating in relays, the four *Staffeln* carried out an hour-long attack against a Guards Tank Brigade intent on making a flank attack against German troops. As the Henschels attacked the

Table 3 Major Units

Stukageschwader 1 (code A5 +)

I and II/St.G 1 formed May 1939; III/St.G 1 formed from 4/Träger Gruppe 186, July 1940. I Gruppe re-designated II/St.G 3 in N. Africa, March 1942. Second formation II Gruppe, May 1942. Re-designated SG 1, October 1943. Ju87B and R, May 1939 and April 1940, Ju87D, February 1942–May 1943; Ju87G with 10 Staffel from October 1943; mixed Ju87D and G, Fw190, May 1943–May 1945 except 10 Staffel, re-designated 2 (Pz)/SG 9 in January 1945. Panzerblitz Fw190F-8 with 3 and 6 Staffeln and Panzerschreck Fw190F-8 with 8 Staffel by 20.4.45.*

Stukageschwader 2 'Immelmann' (code T6 +)

Formed May 1939. II Gruppe re-designated III/St.G 3, early 1942, N. Africa. Second formation II Gruppe, mid-1942. Re-designated SG 2, October 1943. Ju87B and R, May 1939 and 1940–January 1942; Ju87D, January 1942–October 1943; mixed Ju87D and G, Fw190, October 1943–May 1945. Rocket-firing Fw190F-8 with 9 Staffel by 20.4.45.*

Stukageschwader 3 (code S7 +)

I/St.G 3 formed July 1940, II and III Gruppen formed N. Africa May 1942. Re-designated SG 3, October 1943. Ju87B and R, July 1940–mid 1942; Ju87D, mid 1942–June 1944; mixed Ju87D, Fw190, June–August 1944; Fw190, August 1944–May 1945. Ju87G with 10 Staffel, October 1943–December 1944; re-designated 3(Pz)/SG 9 with Fw190, January 1945. Rocket-firing Fw 190F-8 with 6 Staffel by 20.4.45.*

Schlachtgeschwader 4

Formed October 1943 – see Table 2. Fw190 October 1943–May 1945. Panzerblitz Fw190F-8 with 7, 8 and 9 Staffeln by 20.4.45.*

IV (Stuka)/Lehrsgeschwader 1 (code L1 +)

Formed 1938; re-designated I/St.G 5, February 1942. Ju87B, 1938–June 1941; Ju87R, June 1941–February 1942.

Stukageschwader 5 (code J9 +)

Formed February 1942; re-designated SG 5, October 1943; re-designated III/KG 200, November 1944. Ju87R, February 1942–March 1943; Ju87D, March 1943–January 1944; mixed Ju87D, Fw190, January–June 1944; Fw190, June 1944–May 1945.

Schlachtgeschwader 9

IV(Pz)/SG 9 formed October 1943 – see Table 2. I(Pz)/SG 9

formed January 1945 from 12(Pz)/SG 9, 10(Pz)/SG 1 and 10(Pz)/SG 3. Hs129, October 1943–January 1945; mixed Hs129, Fw190, Ju87, January–May 1945. Panzerblitz Fw190F-8 with 1, 3 and 13 Staffeln by 20.4.45.*

Schlachtgeschwader 10

I and II Gruppen formed October 1943 – see Table 2. Fw190, October 1943–May 1945.

Stukageschwader 51 (code 6G +)

III Gruppe formed May 1939; re-designated II/St.G 1, 6 July 1940. Ju87B, May 1939–July 1940.

Stukageschwader 76 (code F1 +)

I Gruppe formed May 1939; re-designated III/St.G 77, 6 July 1940. Ju87B, May 1939–July 1940.

Stukageschwader 77 (code S2 +)

I and II Gruppen formed May 1939; III Gruppe formed – see above – July 1940; re-designated SG 77, October 1943. Ju87B, May 1939–March 1942; Ju87D, March 1942–October 1943; mixed Ju87D and G, Fw190, October 1943–September 1944; Fw190, September 1944–May 1945, except 10 Staffel, which flew Ju87G October 1943–May 1945. Rocket-firing Fw190F-8 with 5. (Panzerschreck) and 9 (Panzerblitz) Staffeln by 20.4.45.*

Schlachtgeschwader 1 (Sch.G 1)

I and II Gruppen formed January 1942; re-designated, as in Table 2, October 1943. Mixed Hs123, Bf109E, Hs129, Fw190, January 1942–October 1943.

Schlachtgeschwader 2 (Sch.G 2)

I and II Gruppen formed September 1942, N. Africa, from III/ZG 1; re-designated, as in Table 2, October 1943. Mixed Bf109E, Hs129, Fw190, September 1942–October 1943.

4/Träger Gruppe 186 (later I/St.G 186)

Formed December 1938; re-designated III/St.G 1, 6 July 1940. Ju87B, December 1938–July 1940.

II(Schlacht)/Lehrsgeschwader 2 (code L2 +)

Formed September 1938; re-designated II/Sch.G 1, January 1942. Hs123, September 1938–June 1940; mixed Hs123, Bf109E, June 1940–January 1942.

* Based on *gem. OKL/Lw. Org.-Stab/2 Abt.v.20.4.45*, which also shows 13./SG 151 with Panzerblitz Fw190F-8.



25. The electro-pneumatically operated 75 mm PaK 40 cannon fitted to a Ju88P-1 for anti-tank operations, late 1943. A small test batch became operational under the Führer der Panzerjäger with Panzerjäger-Staffel 92, but although the cannon was effective the aircraft lacked manoeuvrability. Earlier attempts by III/KG 1 to operate 75 mm cannon-equipped Ju88s independently resulted in the unit's destruction. (Author's collection)

armour, Maj. Alfred Druschel led his Fw190s in to scatter 'splinter' bomb containers over the infantry and mobile flak guns. More than 50 tanks were destroyed and the Russian attack was completely broken.

In spite of such local successes, however, the German troops were too weak to achieve a breakthrough and their advance ground to a halt. On 11 July the Russians launched a counter-attack around Orel; Stuka, ground-attack and anti-tank aircraft concentrated to meet the threat, flew up to six sorties a day in this viciously contested area, and succeeded in preventing the encirclement of their own troops – but 'Zitadelle' had failed. Moreover, the Kursk battles had cost the *Stuka* and *Schlachtflieger* many of their most experienced and most highly decorated unit commanders including Horst Schiller (RK April 44), *Kommandeur* of I/St.G 3; Hptm. Kurt-Albert Pape (RK), *Staffelkapitän* of 3/St.G 1; Hptm. Bernd Wutka (RK 30.11.42), *Staffelkapitän* of 9/St.G 2; Hptm. Rudolf Blumental, *Staffelkapitän* of 9/St.G 77; Oblt. Willi Horner (RK), *Staffelkapitän* of 7/St.G 2, and Hptm. Walter

Krauss (RK, EL 3.1.44) *Kommandeur* of III/St.G 2.

Following up on their counter-attack at Kursk, the Russians launched a series of blows along the entire Central and Southern Front from Smolensk to Rostov. The *Stuka* and *Schlachtverbände* were constantly in the thick of the fighting, being transferred from one part of the front to another as the situation demanded. During September and October, the *Schlachtflieger* destroyed vast quantities of tanks, a number of bridges and other material in a vain attempt to slow the Russian advance around Apostolovo, Zaporozhje and Melitopol. After the first snowfall in the Kiev area, reconnaissance photos showed an apparently heavy concentration of tanks and artillery but no tracks on the ground. St.G 77 mounted a small, exploratory raid, during which the showers of splintered wood thrown into the air by the bomb blasts revealed that the vehicles were dummies.

The Russian flak had now grown so intense that dive-bomber attacks over the battlefield were



26. Interesting air-to-air photo, believed to show Major Theodore Nordmann (RK, EL, S), *Kommodore* of St.G 3, leading Ju87D-5s over the northern sector of the Russian Front in May 1944, shortly before the *Geschwader Stab* converted onto Fw190s. Note SD 2 anti-personnel bomb containers. White stripes on the wheel spats are thought to indicate *Geschwader Stab*, and Nordmann's machine additionally bears the letter 'A' on the front of each spat. (James V. Crow)



27. 'Black men' bomb up the Ju87D-3 flown by Lt. Gerhard Bannacher of I/SG 1; Russian Front, late 1943. (James V. Crow)

little short of suicidal, and many units now flew the Ju87D-5, a version intended primarily for the ground-attack rôle, and which differed from earlier versions in having longer wings and two 20 mm MG 151/20 cannon. Major Lang, whose III/St.G 1 had recently returned to the front after conversion to the D-5, describes the situation on the Central Front at this time:

'We operated from Orsha against targets in the Vitebsk area as well as along the Smolensk highway where battles were raging. Both battle areas stood out black against the snow-covered surrounding terrain. The flashes of the field guns and anti-aircraft guns could be clearly seen, even during daylight. However, the targets were difficult to discern on the soil which was ploughed over by bombs and shells. The gun flashes were often the

only, if most reliable, sign of the enemy's presence. When nearing the target you had to memorise these points, for the Russians immediately ceased firing when we approached, knowing full well that their fire gave them away to us. Only the AA guns continued firing. When making low-level air-to-ground strafing attacks – usually only one pass over the target because of the furious anti-aircraft defences – and when pulling out of the dive to get away low on the deck, we always became painfully aware of the fact that our troops were greatly inferior in number to the Russians. Looking up and waving us a greeting, our soldiers stood in their trenches, alas with many long metres between them. South of Vitebsk the ratio between our forces and the Russian forces was up to 20 to 1.

'Co-operation with our escort fighters was improved by adopting direct R/T communications. However, after two or three sorties had been undertaken we abandoned this practice for we preferred radio silence to the chatter of our fighter escort. Co-operation was good even without this radio contact since we never penetrated farther into enemy territory than his gun positions. The Red Falcons hardly left their own territory and losses suffered by the *Gruppe* were only due to anti-aircraft fire.'

Table 4 Schlachtflieger strengths June '44–Jan. '45

<i>Luftflotte</i>	5	1	6	4		
June '44	20	70	100	390	total	580
end June '44	0	155	375	0	total	530
Jan. '45	0	30	390	200	total	620

As a result of Rudel's achievements with the cannon-carrying Ju87G, a special 10 (*Panzer*) *Staffel* was added to St.G 1, St.G 2, St.G 3 and St.G 77. Each *Panzer Staffel* consisted of twelve Ju87Gs with Flak 18 cannon, but four aircraft carrying bombs were needed to suppress the defensive fire from flak batteries. Operating over the vast open battlefields which afforded the tanks little natural cover, the anti-tank aircraft were of great value to the Germans and greatly feared by the Russians. Tank commanders sometimes fitted smoke canisters to their tanks to simulate knocked out vehicles, but the experienced tank-busters knew that a genuinely disabled tank burned with bright flames.

Although many unit commanders considered the

Ju87 was still adequate for their operational needs, it was clear that the machine would not last forever. However, conversion of the *Stukaverbände* to the Fw190 had been delayed by the requirements of the fighter units and by the end of August 1943 only the *Stabsstaffel* and part of Sch.G 1, themselves restricted by a shortage of 20 mm ammunition and tyres, were flying the type. Replacement pilots were urgently needed to make good the losses suffered during 'Zitadelle', but after the retreat from Stalingrad petrol shortages had restricted flying hours in the training schools, and a two-month course was now spread over five months. The most pressing need, however, was to reform the *Stuka* and *Schlachtflieger* command structures. Until October 1943 the Stukas were directed in the

28. Major Friedrich Lang, Gruppenkommandeur III/SG 1, returns from a sortie over the Vitebsk area, early 1944; in March the Gruppe moved to Vilna for Fw190 conversion. Note streaked snow camouflage on the Ju87D-5; the

Major's rank patches on the flying suit; and the general use of peaked field-caps by Luftwaffe officers at this stage of the war. (Bundesarchiv)



field by the Air Officer for Bombers and the *Schlachtflieger* by the Air Officer for Fighters. Operational control by these two independent bodies, endeavouring to control units in the Mediterranean and on several sectors of the Eastern Front, was hopelessly split, and there existed a real need to unite both arms under one independent command.

This was finally realised when Generaloberst Günter Korten succeeded Jeschonek as Chief of Air Staff and, on 5 October, all dive-bomber, ground-attack and fast bomber *Gruppen* were redesignated and reformed into new *Schlachtgruppen* (see Table 2) under the first *Waffengeneral der Schlachtflieger*, Oberst Dr. Kupfer. At last, more attention was given to the lessons learned at the front and the need for innovation was more keenly appreciated, particularly with regard to the anti-tank units which had to cope with the ever-growing menace of Russian armour.

On 7 October 1943 Kupfer brought the *Störkampfstaffeln* and other sundry units already engaged in night bombing of the Russian lines under his control and reorganised them into *Nachtschlachtgruppen*, or Night Ground Attack Groups. Employing such obsolete types as the Ar66, Go145, He46 and He50, the original *Störkampfstaffeln* went into action in October 1942 during the Stalingrad campaign. Operating from Gradina airfield as far as 36 miles into the Soviet rear areas against troop concentrations, artillery positions and supply and rail depots, the first unit met with considerable success, and three months later more than 200 of these harrassing bombers were in service with *Luftflotten* 1, 4 and 6. In July 1943, when many of *Luftflotte* 1's units were transferred to take part in 'Zitadelle', the *Störkampfstaffeln* saw considerable action in support of ground forces south of Lake Lagoda and made highly successful attacks on rail installations, airfields and Soviet partisans.

In November Kupfer was killed in a flying accident and his replacement, Oberst Hitschold, set in motion plans already laid down to modernise the *Schlachtverbände* with large-scale conversion to the Fw190. II/SG 2 and II/SG 77 immediately received 20 Fw190s; but with the exception of 4/SG 5, which converted in January 1944, no

Table 5
Dive-bomber and ground-attack aircraft losses,
1.9.39–31.12.44

1.9.39–9.5.40	61
10.5.40–1.7.40	147
1.7.40–1.4.41	263
1.4.41–28.6.41	160
29.6.41–30.6.42	769
1.7.42–31.12.42	452
1.1.43–1.7.43	718
1.7.43–31.12.43	1195
1.1.44–31.3.44	542
1.4.44–30.5.44	679
1.6.44–31.8.44	1345
1.9.44–31.12.44	1056
TOTAL	<u>7387</u>

further progress was made until III/SG. 1 began converting in March. The gunners who, in addition to keeping watch for enemy fighters, had also



29. Ju87D-5 of SG 1 silhouetted against a sky marked by the contrails of Russian fighters; note anti-personnel bomb containers under wings, and, in the distance over the starboard wing, two escort fighters. According to Major Lang of III/SG 1, enemy fighters did not make many

helped locate and identify targets, were sorely missed by the pilots, especially unit commanders, for the efficient reforming of the formation when leaving the target particularly depended on the gunner's attention.

Junkers Ju87s which became available from the converting *Schlachtgruppen* were passed to the *Nachtschlachtgruppen*, the type serving with NSGr. 1, 2, 4, 8, 9 and 10, whilst NSGr. 3 and 5 were equipped with the Ar66 and Go145. NSGr. 7 operated the Hs126 and Fiat CR 42, while the Estonian volunteer unit NSGr.11 formed on He50s and NSGr. 12's Latvian volunteers were equipped with the Ar66. Apart from the original aircrew of the re-designated *Störkampfstaffeln*, pilots in the German-manned units consisted of Fw190 pilots unsuitable for the *Schlachtgruppen*, instructors and, later, pilots from disbanded bomber units. During the

autumn battles in Southern Russia the *Nachtschlachtgruppen* were in action nightly against troop concentrations and transport behind the lines. The Russian practice of moving road transport at night, with headlights on, rendered such targets easily detectable and particularly good results were achieved on this sector of the front. A number of *Nachtschlachtgruppen* also flew on anti-partisan operations behind the lines. The three Ju87s of Maj. Bruckner's NSGr.30 sometimes towed troop-filled gliders into areas of particular activity, and in January 1944 supported ground operations around Tuzla in Eastern Bosnia. At Banja-Luka, in Croatia, Maj. Blaich's NSGr. 7 was similarly employed against partisans by day and also operated over the Russian lines at night.

THE LAST ROUNDS

The reverses suffered by the Germans over the entire Eastern Front during the winter of 1943/44 seriously over-extended their forces. Symptomatically, the Hs129s of IV (Pz)/SG 9 were rushed from one part of the Southern Front to another as the situation demanded, attacking targets of opportunity and breaking up concentrations of tanks. Serviceability had improved so that some 70% of the units' 50-60 aircraft were kept operational, but during intensely cold periods the MK 103 cannon under the fuselage iced up and refused to function. When heavy rainstorms turned the landing grounds into muddy lakes, only the broad-tired Ju87s and lighter Hs123s could take off and were in constant action against Russian advances near Odessa. The *Schlachtflieger* were well aware of the fact that the situation on the ground depended on their efforts and took off whenever possible to slow the pace of the advances and give the hard pressed German troops time to consolidate intermediate defence positions.

There then followed a short lull in the fighting as the Russians prepared for their summer offensive. Soviet forces were observed building up, but petrol shortages had begun to cause the first serious curtailment of operations with the result that concentrations of motor transport and tanks were no longer attacked during preparations for an offen-



appearances during this period – late October 1943: 'We always came through unscathed when we had a brush with them. They did not present too great a menace provided the formation stayed together.' (James V. Crow)



30. Hptm. Bauer (RK.EL 18.10.44), Gruppenkommandeur of I/SG 2 'Immelmann', returns from his 1000th sortie on 6 April 1944 to the traditional celebration. He is seen here with his First Mechanic, Uffz. Hageböcker, in 'lucky' chimney-sweep's costume. (Hans Obert)

sive. Nevertheless, vital bridges behind the lines over which the Russians were transporting supplies were frequently attacked despite the concentrations of AA guns. One such mission occurred on 6 June when the Focke-Wulfs of 6/SG 77, escorted by the similarly-equipped 9/SG 10, took off for the third time in two days to bomb a railway bridge south of Lvov and discovered it protected by no less than sixteen Russian flak batteries!

The main effort of the Russian offensive opened at the end of June 1944 against Army Group Centre. A simultaneous outburst of partisan activity almost destroyed German communications with the result that Army Group Centre was torn apart. In Finland, I/SG 5 had fully converted to the Fw190G-1. The *Gruppenkommandeur*, Maj. Martin Möbus (RK-EL) was killed in a car accident and his replacement, Maj. Fritz Schröter (RK 24.9.42) had barely arrived when the Soviet offensive erupted on the Northern Front. I/SG 5 proved remarkably effective against Soviet columns as the surprised Finnish/German forces fell back to new defensive positions, while at night the Ar66s and Ju87s of NSGr.8 harrassed the Russians. Some experts with first-hand knowledge of events at this time, including the *General der Schlachtflieger*, have stated that had there been sufficient petrol to have flown maximum sorties, then the *Schlachtflieger* could have prevented the last disastrous Russian

advance which followed the opening of their offensive. Despite the fact that Gen. Guderian, who recognised the value of aircraft against tanks, had succeeded in obtaining an increased allocation of fuel for the ground-attack units, petrol still had to be very carefully controlled and sorties were only laid on after the Russian offensive began. Table 3 shows how the *Schlachtverbände* were re-distributed to meet the Russian offensive on the north and central fronts.

Among the units opposing the Russian advances into Poland was *Ritterkreuzträger* Oblt. Gunther Ludikeit's 8/SG 77, which frequently flew with the Hungarian dive-bomber unit 102/1. As many German fighter units had been transferred to meet the Allied invasion in the West, Russian fighters became more aggressive and during June and July the mixed formation was often intercepted by Soviet Airacobras. By August, when the Yak-3s of the French-manned *Normandie-Niemen* Regiment appeared on this sector of the Central Front, both 102/1 and the entire SG 77 had converted to the Fw190 but, unused to their new machines, the German and Hungarian crews were no match for the confident Frenchmen. On one occasion, however, when the Russian fighters were tied up before Warsaw and the flak regiment allocated to give cover could not cope with the German aircraft, the *Schlachtflieger* made constant attacks on Soviet detachments as they crossed the Vistula. Taking advantage of the wooded, concealed approach to the river, single machines and flights of aircraft swept low to drop bomb containers (which the Russians nicknamed 'Frogs' because of the rapid series of explosions which followed their release) with considerable effect.

By the end of September, Russian advances had isolated Army Group North in the Kurland Peninsula. Night attacks were carried out by the Estonian NSGr. 11 but during September and October a number of the unit's He50 and Fokker C-VE aircraft, each carrying up to four fugitives, flew out to surrender in neutral Sweden and, owing to a lack of fuel and spares, the unit was disbanded shortly afterwards. The Focke-Wulfs of III/SG 3 and Go145s of NSGr. 3 continued to support the blockaded army units until mid-April, 1945, when they flew out to surrender in Denmark and



31. Influenced by the ideas of the 'camouflage fanatic', Oskar Dinort, subsequent commanders of the 'Immelmann Geschwader' encouraged quite exotic schemes. Here, Fw190F-8 aircraft of SG 2 are prepared for a sortie in

Hungary, 1945 – note anti-personnel bomb containers, and 'scribble' snow camouflage over the grey splinter scheme. (Hans Obert)

Schleswig-Holstein in northern Germany. By January 1945 the Russians had penetrated Hungary up to the Czechoslovak border, and the fuel shortage had now become so acute that the *Schlachtverbände* were practically confined to trying to stop Russian armoured spearheads which had already broken through and were roaming behind the German lines. The reduction in sorties also reduced the effectiveness of two new weapons employed at this time: the SD 4 HL bomb and the rocket projectile.

The SD 4 HL (HL = Hollow Charge) was a 4 kg development of the SD 2 anti-personnel bomb and had first been introduced during the Soviet summer offensive. Packed into containers holding 78 bombs, the SD 4 HL's hollow charge ensured adequate penetration of the more thinly armoured top surfaces of tanks and also had a fragmentation, or shrapnel, effect for use against supporting infantry. The chances of achieving a direct or near

hit was far more favourable than with the earlier high explosive bomb and it was found that hits within a radius of 26.6 yards were still close enough to set fire to the tank's fuel or ammunition.

Although the Russians had made use of their RS 82 rocket as early as 1941, the Germans considered them to be inaccurate, short-ranged and lacking in penetration. This, and the apparently successful use of cannon, actually retarded German appreciation of rockets as tank-busting weapons and it was not until spring 1944 that experiments with the Army's *Panzerschreck* began at Udetfeld under the direction of Maj. Eggars. A total of twelve *Panzerschreck* rockets were fitted under the Fw190 and were fired off from the very close range of 150-600 feet. Although one hit was sufficient to set a tank on fire, the rockets were inaccurate and, on average, it required three aircraft firing full loads to ensure a hit. The advantage, however, was that tanks no longer had to be attacked from

behind. The *Panzerschreck* was first used operationally in Russia during October 1944, and in December the improved *Panzerblitz I* was fitted, this having adequate penetrating power from ranges of 300–900 feet. It was planned to equip three specially trained anti-tank *Staffeln* with rocket firing Fw190s in every *Schlachtgeschwader*, and Table 4 includes information showing the progress made in this direction up until 20 April 1945.

By the end of January 1945 Soviet troops held a solid front along the Oder, less than 40 miles from Berlin, and the *Schlachtflieger* were flung in especially at the important crossing points of Stettin, Kustrin, Frankfurt-an-der-Oder and south of Guben. Intensely cold weather and blizzards hampered operations. Snow blown into the mechanism of the Ju87's anti-tank cannon froze hard as soon as the aircraft were airborne; if the cannon fired at all, they would often jam after only a few rounds. Similar difficulties befell Oblt. Gebhard Weber's 10 (Pz)/SG 9 which, together with 14 (Pz)/SG 9 was operating with a few Hs129-3s fitted with the enormous 75 mm BK 7.5 cannon under the fuselage. Although this aircraft had the extraordinary advantage of being able to destroy tanks with each direct hit, only a few rounds could be fired during the run in to the target due to the slow rate of fire.

Nearly all the crossing points over the Oder were powerfully protected by flak and fighters, but at Kustrin the Russians found themselves temporarily beyond the range of fighter cover and without anti-

32. Groundcrew guide an immaculately finished Fw190F-8 onto the runway; Hungary, early 1945. Note the yellow 'V'-marking applied to the port wing undersurface, and



33. The Ju87G tank-buster, with two BK 3,7 Flak 18 cannon, proved extremely effective in its specialised rôle on the Russian Front. (Author's collection)

aircraft support. On 2 February large formations of Focke-Wulfs began to bomb and strafe Russian troops manhandling lorries and anti-tank guns over the frozen river. The following day, however, the anti-aircraft regiment arrived and in the face of mounting losses, attacks by large formations were discontinued. Nevertheless, their appearance over the battlefield still had a profound effect on the morale of German troops and the unexpected arrival of the *Schlachtverbände* could still turn an otherwise hopeless situation into a local victory. East of Frankfurt-an-der-Oder, a flight from the 'Immelmann' *Geschwader* repeatedly attacked Soviet tanks which had surrounded a small German force. The German soldiers, who had given themselves up for lost, now enthusiastically pursued the fleeing tanks regardless of their own safety. Such

the wheel covers removed to prevent snow packing around the wheels. (Hans Obert)



incidents encouraged soldiers and *Schlachtflieger* alike to continue the hopeless struggle.

The *Schlachtverbände* lost its greatest number of pilots during this final phase of the war (Table 5) as they vainly tried to stem the flood of Soviet armour. Many of the pilots lost were highly decorated unit commanders. Hptm. Werner Hoffman (RK), *Staffelkapitän* of I/SG 1 was shot down on 2 February near Frankfurt-an-der-Oder, and a week later Maj. Horst Kaubisch (RK, EL 27.6.44) was shot down during an air battle near Berlin whilst leading the *Stabsstaffel* of I/SG 1; 3/SG 1 lost its commander, Hptm. Johann Schalanda (RK, EL 24.10.44) on 26 March, and on 30 April Hptm. Andreas Kuffner (RK, EL 27.12.44) was shot down and killed over Sulte airfield near Schwerin

34. The extraordinary Hans-Ulrich Rudel, finally credited with the destruction of 519 Soviet armoured vehicles, a battleship, a cruiser, a destroyer, 70 landing craft and nine aerial 'kills', apart from many miscellaneous ground targets. Seen here as Kommodore of SG 2, Obstlt. Rudel

whilst leading a *Staffel* of SG 2. Just a week before the surrender Maj. Helmut Viodebannt, the *Geschwaderkommodore* of SG 10, crashed near Wusterhausen during an attempt to drop a supply container to Berlin; and Oblt. August Lambert, (RK 14.5.44) leading 8/SG 77, was shot down on 17 April when American fighters surprised the unit as it was taking off from Kamenz airfield.

In these last confused weeks, even the *Schlachtflieger's* two training and replacement *Geschwader*, SG 151 and SG 152, were made fully operational but even the bitterest defensive efforts could not hold back the enormously strong Russian forces. The *Schlachtverbände* were still hunting tanks in support of isolated pockets of resistance when the news of the final collapse came through. Units (left) wears the Knight's Cross with Oakleaves, Swords and Diamonds. He is planning a sortie during the winter of 1944-45 with Fw. Bölling and Uffz. Maldinger. (Author's collection)



were released, the aircrew being allowed to fly to the airfield nearest their home. Many formations were in territory to be occupied by the Russians and those with fuel continued to fight their way out to surrender to the Western Allies. The 'Immelmann' *Geschwader* was almost certainly the last ground attack unit to surrender when Oberst Hans-Ulrich Rudel, its brilliant *Kommodore*, led a small formation of three Ju87s and four Fw190s to deliberately crash-land on the US-held airfield at Kitzingen on 8 May. For these pilots, and others who had succeeded in surrendering in the West, the war was over; but for many air and ground crews isolated in Soviet territory a further battle, for survival in Russian prison camps, was yet in store.

Junkers Ju87B-2, Ju87D-5

All-metal two-seat single-engined dive-bomber with fixed undercarriage. Prototype Ju87V-1 first flew 17 September 1935; Ju 87A-1 entered squadron service with I/St.G 162 in spring 1937; first saw action over Teruel, Spain, late December

1937. Total production of all marks A–D in excess of 5,700; approximately 240 Ju87Ds rebuilt to Ju87G standard. Ju87D–5 details in parentheses in Ju87B-2 specification as follows:

Wing span 45 ft 3½ in (49 ft 2½ in) *Length* 36 ft 1 in (37 ft 8¾ in) *Height* 12 ft 9½ in (12 ft 9½ in) *Wing area* 343.36 sq ft (362.6 sq ft) *Weight loaded* 9,370 lb (14,553 lb) *Armament* 2 × 7.9 mm MG 17 in wings, 1 × 7.9 mm MG 15 in rear cockpit (2 × 20 mm MG 151/20 cannon, 2 × 7.9 mm MG 81) *Max. bomb load* 1,540 (3,968 lb) *Powerplant* One Junkers Jumo 211Da; 1,100 hp (one Jumo 211J-1; 1,400 hp) *Max. speed* 237 mph at 13,124 ft (255 mph at 12,600 ft) *Max. dive speed* 404 mph (404 mph) *Ceiling* 26,248 ft (15,520 ft) *Range* 370 miles (954 miles) *Crew* 2 (2).

Focke-Wulf Fw190F-8

All-metal single-seat radial engine monoplane with retractable undercarriage. Fw190F and G series were specialised armoured ground-attack versions of the successful Fw190A fighter. The long-range Fw190G entered service in N. Africa with II/Sch.G 2 in November 1942; production was terminated in February 1944 in favour of the F series, which entered service in the spring of 1943.

Wing span 34 ft 5½ in *Length* 29 ft 4¾ in *Height* 12 ft 11½ in *Wing area* 198.98 sq ft *Weight loaded* 9,750 lb *Armament* 2 × 20 mm MG 151 cannon in wings, 2 × 13 mm MG 13 machine guns in fuselage nose *Standard bomb load* 991 lb *Powerplant* One BMW 801D-2; 1,700 hp *Max. speed* 408 mph at 19,686 ft *Ceiling* 37,403 ft *Normal range* 500 miles.



35. Fine view of a Ju87G of 10(Pz)/SG 2; the Staffel was led by Lt. Anton Koral, awarded the Knight's Cross on 12

March 1945, who was credited by the war's end with 704 sorties and 99 Soviet AFVs destroyed. (Author's collection)

LÉGENDES

1 Ju87A-1 du 'Jolanthe Kette', une escadrille de St.G 163 - Espagne, début de 1938. 2 Chargement de bombes à bord d'un appareil de St.G 165 au moyen d'un chariot hydraulique. 3 Ju87B-1 du IV (Schlacht)/LG 1 - Pologne, 1939. 4 Chargement des mitrailleuses sur un Ju87B-1 du 9/St.G 2 - France, 1940. 5 Ju87R-1s, avec réservoirs d'essence supplémentaires, probablement du I/St.G 1; cette unité participa au combat en Norvège, 1940. 6 Hs123As du II(Schlacht)/LG 2 - à noter l'usage inhabituel de numéros individuels pour chaque avion, comme pour des avions de chasse. 7 Stukas du IV(Stuka)/LG 1 - France, 1940. L'appareil de queue est immatriculé LI + DU. A noter, sur la bombe, les grosses protubérances qui s'engageaient dans la 'bequille' qui projetait les bombes hors d'atteinte de l'hélice. 8 Ju87B-2s au-dessus de la France, 1940. 9 Ju87B-2 du I/St.G 2 - Péloponèse, mai 1941, lors des assauts massifs de Stukas contre la Royal Navy. 10 & 11 I/St.G 1 et II/St.G 2 attaquent et endommagent gravement le porte-avions *HMS Illustrious*, 100 miles au large de Malte, 10 janvier 1941.

12 Major Enneccerus, Kommandeur du II/St.G 2, en vol dans son Ju87R-2 - T6 + AC - en Méditerranée; en mars 1943 l'unité fut immatriculée III/St.G 3. 13 Attaque des tranchées de Tobruk, vue du poste de mitrailleur d'un Stuka. 14 & 15 Attaque d'un convoi, vue d'un Stuka. 16 Henschel Hs129 sérieusement endommagé. Les pertes en combat étaient généralement dues aux balles de l'infanterie qui touchaient les moteurs. 17 Oblt. Meinicke, Staffelfkapitän du I/Sch.G 1 remet le Brevet pour Vols de Guerre au Lt. Harang. Meinicke tomba près de Mutino, Russie, le 4 septembre 1943. 18 Meinicke - à gauche, avec Ritterkreuz - près de Smolensk novembre 1942. 19 Major Tonne, deuxième de gauche à droite, avec des pilotes du I Gruppe de son SKG 10 - France, 1943. A l'arrière-plan, le Fw190A-4/U8 est marqué d'un triangle noir à l'avant de la croix sur le fuselage ce qui l'identifiait comme avion du I Gruppe; le II Gruppe avait un triangle derrière la croix. La plupart des avions du SKG 10 furent déplacés vers le sud pour résister à l'invasion alliée de la Sicile; Tonne périt dans un accident à Reggio le 15 juillet 1943. 20 Hs129B-1/R2 avec canon de 30 mm MK 101 sous le fuselage. Les pilotes du 8/Sch.G 1 étaient envoyés au combat sans véritable entraînement et ils subirent de lourdes pertes avant d'être renforcés par leur amalgamation avec le Staffel anti-char du JG51.

21 Hs129 du 8/Sch.G 2 près de Tripoli. L'unité fut formée d'hommes du JG27 et JG53 et devint opérationnelle en février 1943. 22 Ju 87D-3s peints en blanc, probablement du St.G 2, décollent en échelons d'un aérodrome russe. 23 Hptm. Kurt Lau (à gauche) du I/SG 2, décoré de la Ritterkreuz le 6 avril 1944. 24 Ju87Ds du 7/St.G 1 au-dessus du nord de la Russie, été 1942. En mai 1943 cette unité commença un entraînement - pas officieux - avec des Fw190s. 25 Canon de 75 mm PaK 40 monté sur un Ju88P-1; le canon, essayé en combat par le Panzerjäger Staffel 92, fut efficace mais l'avion n'était pas suffisamment manoeuvrable. 26 Major Theodore Nordmann, Kommodore du St.G 3, dans un Ju87D-5 au-dessus du nord de la Russie, mai 1944. Les rayures blanches sur les protège-roues indiquent 'État-Major du Geschwader' et la lettre 'A' sur les protège-roues, l'avion du Kommodore. 27 Chargement de bombes à bord du Ju87D-3 piloté par Lt. Gerhard Bannacher du I/SG 1, Russie, fin de 1942. 28 Major Friedrich Lang, Gruppenkommandeur du III/SG 1 revient de mission sur Vitebsk, début 1944. 29 Ju87D-5 du SG 1 avec caissons de bombes à shrapnel sous les ailes; octobre 1943. Les 'contrails' dans le ciel annoncent des chasseurs russes, qui n'étaient pas très agressifs à cette période. 30 Hptm. Bauer, Kommandeur du I/SG 2 'Immelmann', au retour de sa millième mission, à la réception traditionnelle. Son principal mécanicien, Uffz. Hageböcker, est déguisé en 'ramoneur porte-chance'.

31 Les appareils du SG 2 étaient souvent camouflés de façon assez bizarre, tradition inaugurée par Oskar Dinort et continuée par les autres commandants de l'unité. Fw190F-8, Hongrie, début 1945, avec camouflage de neige blanc en rayures sur fond gris. 32 Un Fw190F-8,

dont les protège-roues ont été enlevés d'éviter les entassements de neige autour les roues, se prépare à l'envol; Hongrie, début 1945. 33 Ju87G, appareil anti-char, avec deux canons BK 3, 7 Flak 18 de 37 mm. 34 Le légendaire Kommodore du SG 2 'Immelmann', Oberstleutnant Hans-Ulrich Rudel, prépare un 'razzia' avec Fw. Bölling et Uffz. Maldinger. Rudel aurait détruit 519 chars russes, un cuirassé, un croiseur, un destroyer, 70 péniches de débarquement, et neuf avions en vol. Il était le seul à être décoré de la Ritterkreuz avec Feuilles de Chêne d'Or, décoration créée pour lui. 35 Ju87G, un avion anti-char du 10(Pz)/SG 2; le Staffel était commandé par le Lt. Anton Koral, qui détruisit 99 chars soviétiques au cours de 704 vols de guerre et gagna le Ritterkreuz.

Notes sur les planches en couleur

Page 25: Feldwebel Stuka Pilot avec un casque léger en toile et costume de vol beige, 1940. Il porte une veste de pilote chasseur, avec un compas attaché au tuyau de remplissage. Des bottes de vols moitié en daim, sur les jambes, et moitié en cuir sur les pieds, sont portées, et le calot bleu des troupes Luftwaffe se trouve dans la poche sur la jambe du costume. Les trois 'ailes' sur le bras indiquent ce rang.

Page 26, au-dessus: Messerschmitt Bf109E-4/B piloté par Willi Tritsch, II (Schlacht)/LG 2, Russie, été 1941. Camouflage en 'éparpillement' de couleurs 70 et 71 sur les surfaces supérieures, tacheté sur le fuselage; les endroits jaunes sont typiques des avions en service en Russie. Le triangle noir est l'emblème du Gruppe, le 'C' est la lettre individuelle de l'avion. L'insigne du Gruppe, un Mickey Mouse, apparaît sur les deux côtés du nez. **Page 26 en bas:** Junkers Ju87D-1 Trop. du 6/St.G 3, Libye, juillet 1942. Camouflage européen assez fané, avec une bande blanche, signe typique des opérations du théâtre du sud. 'S 7' indique le Geschwader, 'K' l'avion et 'P' le Staffel. Insigne d'un corbeau en vol piqué de ce Gruppe sur le côté gauche uniquement.

Page 27: Henschel Hs129B-2/R2, No. 0364, piloté par Rudolf-Heinz Ruffer, Staffelfkapitän du 8(Pz)/Sch.G 1; Kuban, Russie, printemps 1943. Camouflage européen, fané avec des marques jaunes du front russe. 'J' indique l'avion, et la barre horizontale, le Gruppe. Les emblèmes des chars rappellent les 'Mises à Mort' de l'avion; le Brevet de l'Infanterie d'Assaut - les rapports étroits entre les pilotes d'assaut à terre et les soldats de l'infanterie. Les marques d'usine GS-IN n'ont pas encore été recouvertes avec de la peinture.

Pages 28-29: Junkers Ju87B-1, 6/St.G 77, Balkans, printemps 1941. Camouflage fané des couleurs 70 et 71 avec des marques jaunes du théâtre des opérations. 'S2' indique le Geschwader, 'A' l'avion individuel et 'P' le Staffel; 'A' est répété sur les ailes. Le nom 'Anton Der Zweite' est peint sur le côté gauche du nez, et la plaque du 6/St.G 77 se trouve sur les deux côtés du fuselage.

Page 30: Focke-Wulf Fw190F-8, II/SG 2 'Immelmann'; Hongrie, février 1945. Camouflage gris, couleurs 74 et 75, recouvert avec un second camouflage de neige, avec des marques jaunes habituelles du Front de l'Est. '2' indique l'avion et le chevron sur l'aile et le fuselage indiquent 'Gruppenadjutant'.

Page 31: Emblèmes des unités de (A) 7/St.G 77 (B) 4 (Pz)/Sch.G 1 (C) Störkampfstaffel 6 (D) signe personnel, Ju 52/3m avion de transport du General der Schlachtflieger (E) 4/St.G 77 (F) 5(Schlacht)/LG 2 (G) 7/St.G 1.

Page 32, à gauche: Oberleutnant Stuka pilote, St.G 2 'Immelmann', 1943 en tenue journalière. Les deux étoiles sur les épaulettes et les deux 'ailes' sur les insignes du col indiquent son rang, et le fond jaune de ces signes indiquent qu'il est officier d'équipage. Le titre de 'Immelmann Geschwader' est porté sur la manche droite et le Ritterkreuz à la gorge. L'attribut de pilote et ses décorations diverses, sont portés sur la poitrine à gauche.

Page 32, à droite: Unteroffizier, 1942, portant le 'blouson de pilote', souvent porté comme tenue journalière au Front. Son col, insignes du col et les épaulettes ont la couleur rouge typique de la section des armuriers, et l'insigne de l'armurier apparaît sur la manche. Le calot à l'aigle Luftwaffe (qui se répète sur la poitrine à droite) et au-dessus se trouve une cocarde dans les couleurs nationales, rouge, blanc et noir. Les calots des officiers ont du gansé argenté autour sur les côtés.

ÜBERSCHRIFT

1 Ju87A-1 der 'Jolanthe Kette', eine Abteilung der St.G 163 in Spanien, Frühling 1938. 2 Bomben erden mittels einer hydraulischen Karre in eine Maschine der St.G 165 aufgeladen. 3 Ju87B-1 der IV(Schlacht)/LG 1, Polen 1939. 4 Munitionsnachschub auf einer Ju87B-1 der 9/St.G 2, Frankreich, 1940. 5 Ju87R-1s mit Zusatztreibstoffbehälter, vermutlich der I/St.G 1. Deise Einheit wurde über Norwegen, 1940 eingesetzt. 6 Hs123As der II(Schlacht)/LG 2. Der gebrauch von Maschineerkennungsnummern, wie bei den Jägerheiten bemerken! 7 Stukas der IV (Stuka)/LG 1, Frankreich 1940. Das Flugzeug im Hintergrund hat die Erkennungsbuchstaben 'L1 + DU'. Die grossen Stollen auf der Bombe sind so konstruiert, dass die in den 'Gabel' beim abwerfen einrasten. Der Gabel bringt die Bombe ausserhalb des Propellorkreises. 8 Ju87B-2s über Frankreich, 1940. 9 Ju87B-2 der I/St.G 2; in der Peloponese, Mai 1941 zur Zeit der grossen Stuka Luftangriffen auf der Royal Navy. 10 & 11 I/St.G 1 und II/St.G 2 beschädigten schwer den Flugzeugträger 'HMS Illustrious' durch Luftangriffe 100 Meilen von Malta, 10. Januar 1941.

12 Major Enneccerus, Kommandeur der II/St.G 2 in seinem Ju87R-2 (T6 + AC) über das Mittelmeer. Im März 1943 wurde diese Gruppe in der 'III/St.G 3' umgetauft. 13 Blick eines Stuka MG-Schützers während einem Luftangriff auf die Schützengraben bei Tobruk. 14 & 15 Blick aus einem Stuka bei einem Luftangriff auf einem Geleitzug. 17 Schwer beschädigte Henschel Hs129. Die meisten Schlachtausfälle wurden hauptsächlich durch Motortreffer von Infanterie FLA verursacht. 17 Oblt. Meinicke, Staffelkapitän der I/Sch.G 1 übergibt an Lt. Harang die Frontflugschleife. Meinicke fiel bei Mutino, Russland, 4. September 1943. 18 Meinicke (links, mit Ritterkreuz) bei Smolensk, November 1942. 19 Major Tonne (2. von links) mit Piloten der I Gruppe seiner SKG 10; Frankreich, 1943. Die Fw190A-4/U8 im Hintergrund trägt ein schwarzes Dreieck am Rumpf bevor dem Balkenkreuz. Die II Gruppe trug das Dreieck hinter dem Balkenkreuz. Die Mehrzahl von SKG 10 wurde nach dem Süden, um die alliierte Invasion von Sizilien zu bekämpfen, versetzt. Tonne kam in einem Unfall bei Reggio 15. Juli ums Leben. 20 Hs129B-1/R2 mit 30 mm MK 101 Kanone unterm Rumpf. Die Piloten der 8/Sch.G 1 wurden ohne ausreichender Ausbildung an der Front eingesetzt und erlitten schwere Verluste bevor sie mit dem Panzer jägerstaffel der JG 51 einverleibt wurden.

21 Hs129 der 8/Sch.G 2 bei Tripoli. Diese Einheit wurde aus Personal der JG 27 und JG 53 errichtet und wurde zum erstmalig Februar 1943 eingesetzt. 22 Weissgestrichene Ju87D-3s, vermutlich der St.G 2, machen einen Formationsstart von einem Flugplatz in Russland. 23 Hptm. Kurt Lau (links) der I/SG 2. Ihm wurde das Ritterkreuz am 6. April 1944 verliehen. 24 Ju87Ds der 7/St.G 1 über Nord-Russland, Sommer 1942. Im Mai 1943 fing diese Einheit (auf eigener Faust) mit der Ausbildung ihres Personals auf der Fw190 an. 25 75 mm Kanone 'PaK 40' auf einer Ju88P-1. Diese Kanone/Maschine Ehe wurde versuchsweise von Panzer jägerstaffel 92 (von Führer der Panzerjäger) eingesetzt. Die Kanone kam mit guten Noten davon, das Flugzeug aber besass mangelhafte Manövrierfähigkeit. 26 Major Theodore Nordmann, Kommodore St.G 3 in seinem Ju87D-5 über Nord-Russland, Mai 1944. Die weissen Streifen auf den Radhauben bedeuten 'Geschwader Stab'; die Buchstabe 'A' auf den Radhauben heisst 'Kommodoreflugzeug'. 27 Bodenbedienung von Ju87D-3 von Lt. Gerhard Bannacher der I/SG 1, Russland, spat im 1943. 28 Major Friedrich Lang, Gruppenkommandeur III/SG 1, kehrt von einem Einsatzflug über Vitebsk, im Frühjahr 1944 zurück. 29 Ju87D-5 der SG 1 mit Schützenbombenbehälter, Oktober 1943. Die 'Himmelspuren' sind von russischen Jägern, die zu dieser Zeit, nicht sehr aggressiv waren. 30 Hptm. Bauer, Kommandeur I/SG 2 'Immelmann', kehrt von seinem 1000. Einsatzflug zurück und wird traditionelleweise gefeiert. Sein Bodenmechaniker, Uffz. Hageböcker hat sich als glückbringende Schornsteinfeger verkleidet.

31 Die Flugzeuge der SG 2 trugen oft exotische Tarnfarben, eine Sitte von Oskar Dinort begründet und von spätem Kommandeure fortgetragen. Fw190F-8, Ungarn, Frühjahr 1945 mit weisser Schneetarnfarbe über die graue Grundfarbe gestrichen. 32 Ein Fw190F-8

(ohne Radhauben, um mögliche Radblockierungen durch Schnee zu verhindern) bereitet sich für den Start in Ungarn, Frühjahr 1945 vor. 33 Ein Ju87G 'Panzerknacker' mit zwei BK 3, 7 FLA 18 Kanonen. 34 Der legendäre Habs-Ulrich Rudel, Kommodore der SG 2 plant mit Fw. Bölling und Uffz. Mالدinger einen Einsatzflug. Rudel wurde die Vernichtung von 519 russ. Panzern, einem Schlachtschiff, einem Kreuzer, einem Zerstörer, 70 Landungsschiffen und 9 Flugzeugen zugeschrieben. Für ihm wurde die Ordenstufe 'Ritterkreuz mit goldenen Eichenlaube' geschaffen und an ihm wurde die einzige Exemplare verliehen. 35 Ju87G der 10 (Pz)/SG 2. Der Staffelkapitän war Lt. Anton Koral, der über 704 Einsatzflüge machte, 99 russ. Panzer vernichtete und das Ritterkreuz verdiente.

Farbtafeln

Seite 25: Feldwebel-Pilot eines Stukas im leichten Segelstofffliegerhelm und rehfärbigen Fliegeranzug, 1940. Er trägt die Jagdflieger-Rettungsweste mit einem Kompass, an dem Luftzufuhrrohr angeschnallt. Die schwarzen Fliegerstiefel haben Schaften aus Wildleder. In seiner Hosenwaden tasche hat er sein blaue Luftwaffenmannschaftsschiffchen gesteckt. Die drei auf den Ärmel angebrachten Flügel bedeuten 'Feldwebel'.

Seite 26, Oben: Messerschmitt Bf109E-4/B, von Willi Tritsch, II (Schlacht)/LG 2, Sommer 1941 in Russland geflogen. Die oberen Flächen sind in der 'Splitter' Tarnfarbenschema (die Farben 70 und 71). Viele der in Russland eingesetzten Flugzeugen trugen solche gelbe Flächen. Das schwarze Dreieck ist das Gruppenemblem; 'C' die Maschineerkennungsbuchstabe. Das Gruppenmaskotchen, Mickey Mouse, erscheint auf den beiden Rumpfspitzen. Seite 26, Unten: Junkers Ju87D 1 Trop der 6./St.G 3, Lybien, Juli 1942. Die europäischen Tarnfarben sind verblichen. Die weisse Streife heisst: Südliche Kriegsschauplatz. Geschwader Kennzeichen - 'S7'; Flugzeugerkennungsbuchstabe - 'K'; Staffelerkennungsbuchstabe - 'P'. Das Gruppenemblem - einen sturzenden Rabe - erscheint nur links.

Seite 27: Henschel Hs129B-2/R2, Nr.0364 von Rudolf-Heinz Ruffer, Staffelkapitän der 8.(Pz)/Sch.G 1 in der Kuban, Russland, Frühling 1943 geflogen. Verblichene europäische Tarnfarbenschema mit gelbe 'Russland' Markierungen. 'J' - Flugzeugerkennungsbuchstabe. Der waagerechte Riegel ist das Gruppenemblem. Die kleine Panzerabbildungen stellen vernichtete Panzer dar. Das Infanteriesturmabzeichen deutet auf die engen Verbindungen die zwischen Schlachtgruppenpiloten und Infanteristen existierten hin. Das Fabrikkennzeichen (GS-IN) ist noch nicht überstrichen worden.

Seiten 28 u 29: Junkers Ju87B-1 der 6/St.G 77 in Balkanhalbinsel, Frühling 1941. Verblichene Tarnfarben (70 und 71) mit gelben Kriegsschauplatzmarkierungen. Geschwaderkennzeichen - 'S2', Maschinebuchstabe - 'A', Staffelmuchstabe - 'P'. Die 'A' erscheint auch auf den beiden Flügeln. Die Name 'Anton der Zweite' erscheint nur links auf der Rumpfspitze, das Wappen der 6/St.G 77 dagegen zu beiden Rumpfsseiten.

Seite 30: Focke-Wulf Fw190F-8 vom Adjutant, II/SG 2 'Immelmann', Ungarn, Februar 1945 geflogen. Graue Tarnfarben (74 und 75) mit Schneetarnfarbe überstrichen. Der Winkel auf Rumpf und Flügel heisst - 'Gruppenadjutant'.

Seite 31: Einheitsembleme: (A) 7/St.G 77 (B) 4(Pz)/Sch.G 1 (C) Störkampfstaffel 6 (D) Personliche Wappen des Ju52/3 m Transportflugzeuges des General der Schlachtfliegers. (E) 4/St.G 77 (F) 5(Schlacht)/LG 2 (G) 7/St.G 1

Seite 32, links: Oberleutnant-Pilot eines Stukas, St.G 2 'Immelmann', 1943, im Dienstanzug. Die Dienstgradabzeichen bestehen aus dem einzigen Stern auf den Schulterstücke und aus der zwei Flügeln auf den Kragenspiegel. Die gelbe Waffenfarbe heisst 'Fliegerbranche'. Der Ehrentitel des 'Immelmann Geschwaders' wurde auf dem rechten Ärmel und das Ritterkreuz um den Hals getragen. Das Fliegerabzeichen und verschiedene Orden erscheinen am linken Brust. Seite 32, rechts: Unteroffizier, 1942, in der Fliegerbluse, die oft als 'Dienstanzug' an der Front getragen wurde. Kragen, Kragenspiegel und Schulterstücke zeigen die rote Waffenfarbe der Waffenspezialisten. Auf den Ärmel erscheint das Waffenunterführeremblem. Das Schiffchen trägt den Luftwaffen-Adler (dass auch auf der rechten Brustseite erscheint) über die rote-weiss-schwarze Kokarde. Offiziersschiffchen wurden mit silbertressen den Seiten entlang besetzt.

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