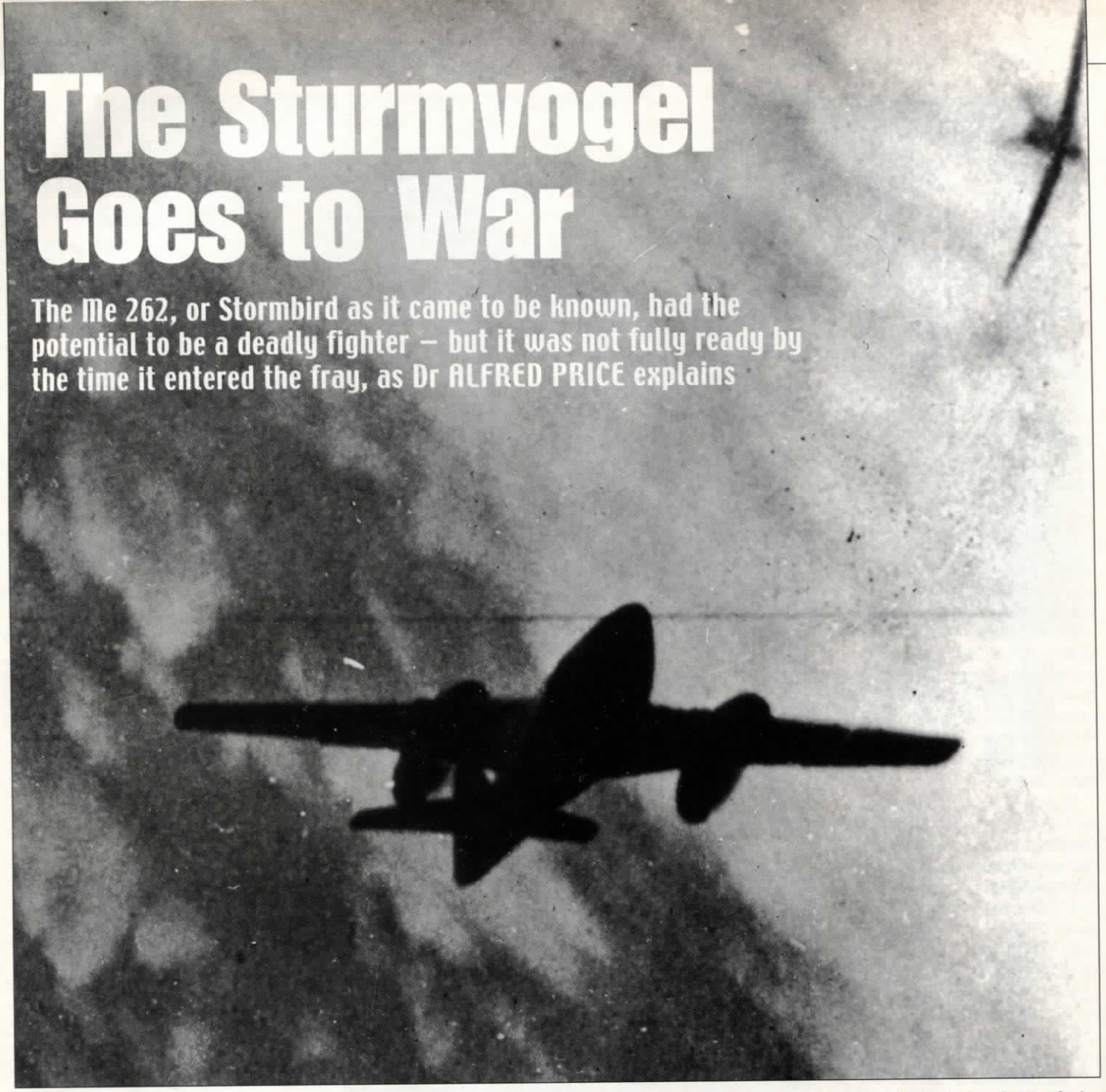
The Sturmvogel Goes to War

The Me 262, or Stormbird as it came to be known, had the potential to be a deadly fighter – but it was not fully ready by the time it entered the fray, as Dr ALFRED PRICE explains



A FEW DAYS AFTER issuing his Blitzbomber edict, Adolf Hitler relented a little. He agreed to allow testing of the fighter version of the Me 262 to continue, provided that it did not delay the entry into service of the bomb-carrier. In mid-July 1944, Ekdo 262 had commenced flying operational tests of the Me 262 in the fighter role. Initially the targets were the lone Allied reconnaissance aircraft which overflew the unit's base.

Within days of commencing operational test flights, Ekdo 262 lost its commander in circumstances that are far from clear. Luftwaffe records state that Hauptmann Werner Thierfelder's Me 262 was "shot down", and crashed near Landsberg with the pilot still on board. But a search of British and American records reveals no engagement which links with this loss. Furthermore, the Allied long-range reconnaissance aircraft, the Me 262's main prey, were unarmed.

At that time little was known about the effects of compressibility on aircraft control. If Thierfelder had followed a reconnaissance aircraft when it dived to escape, he could have exceeded the Me 262's safe limiting Mach number of 0·83 and lost control. At full throttle in a 20° descent from 26,000ft, an Me 262 could reach its compressibility threshold before it descended through 7,000ft. It required a considerable backward pressure on the control column to prevent the dive from steepening uncontrollably. Cutting the throttles had no effect, for the clean-lined jet fighter continued to gain speed in the dive.

Me 262 pilot Karl "Quax" Schnörrer experienced the phenomenon when he followed an enemy reconnaissance aircraft diving to escape. Suddenly he found he had lost control of his aircraft:

"I pulled back on the stick with all my strength, but the '262 refused to come out of its dive. Finally, in desperation, I jettisoned my canopy; this caused a change of trim, and the aircraft came out of the dive by itself. I landed without my canopy and with the skinning of the wings rippled; the '262 was a write-off."

Other Me 262 pilots reported similar narrow escapes, but they were the lucky ones. Others plunged into the ground, seemingly for no reason. The available evidence suggests that Werner Thierfelder, the world's first jet fighter unit leader, might have fallen to this cause.

Thierfelder's successor was *Major* Walter Nowotny, a capable young fighter pilot credited with 255 victories on the Eastern Front.

On July 25, an RAF reconnaissance de Havilland Mosquito of 544 Sqn had an

ABOVE This dramatic combat photograph from a P-51 shows an Me 262 as it presses home an attack on another Mustang.
BELOW Leutnant Karl "Quax" Schnörrer flew as Walter Nowotny's wingman.

inconclusive brush with an Me 262 near Munich. Flight Lieutenant A.E. Wall opened the throttles and pushed down the nose of the Mosquito to build up speed, curving steeply to port as he did so. The jet fighter easily overhauled the reconnaissance aircraft, but Wall found little difficulty in out-turning his assailant. The '262 made three firing runs on the Mosquito, without scoring hits, before Wall escaped into cloud.

During the following month, Nowotny's pilots claimed five kills; a Mosquito on the 8th, a B-17 on the 16th, a Lockheed P-38 Lightning on the 24th, and a reconnaissance Spitfire and a reconnaissance Mosquito on the 26th.

Enter the Blitzbomber

Towards the end of June 1944 the first Me 262 Blitzbomber unit, *Erprobungskommando Schenk*, formed at Lechfeld under the command of Major Wolfgang Schenk. The conversion of pilots to fly the new bomber took almost a month, and on July 20 the unit moved to Châteaudun near Orléans in France.

With nine aircraft fitted with pre-production engines, the unit was ready to mount the world's first jet bomber operations. The continuing regard for the Me 262 in the high-speed bomber role after the Allied landings in Normandy had succeeded might seem to run counter to Hitler's stated aim to use the type during the initial hours of an invasion. Allied intelligence officers, however, had successfully convinced their German counterparts that the Normandy landings were a feint, to draw forces away from the Pas de Calais where the main invasion would come later. If the Allies did launch a second invasion operation, Erprobungs-kommando Schenk was to be ready to meet it.

Schenk's high-speed bombers flew spasmodic operations against Allied ground forces. The pilots had strict orders not to descend below 4,000m

ABOVE **Between a rock and a hard place — an Me 262 committed to landing made easy pickings for Allied fighters.**
LEFT **In August 1944 fighter ace Walter Nowotny took command of Ekdo 262, renamed *Kommando Nowotny*.**

(13,000ft) during their attacks, to reduce the risk of losses and so help preserve the small force for the counter-invasion role. The Me 262 carried no high-altitude bombsight, so accuracy was poor and the attacks achieved little. In mid-August the German retreat out of France was in full swing and the fighter-bomber unit, now redesignated 1st Gruppe of Kampfgeschwader 51, withdrew to Chièvres in Belgium. The Luftwaffe efforts to keep secret the deployment to France had been completely successful. Allied intelligence documents make no mention of Me 262 fighter-bombers taking part in operations over France at that time.

Only on August 28 did an Allied fighter first make contact with one of the elusive jet fighter-bombers. That afternoon Major Joseph Myers, flying a Republic P-47 of the 78th Fighter Group, caught up with one of these aircraft and forced it down near Brussels. The German pilot escaped without injury.

During July 1944 there had been heavy air attacks on the factories producing Me 262 components; Leipheim was hit on the 19th and Regensburg on the 21st. The number of Me 262s delivered to the Luftwaffe was 28 in June, rising to 59 in July but falling to 20 in August.

A Messerschmitt company document dated August 10, 1944, stated that by then ten prototype Me 262s and 112 production aircraft had been built. On that date six prototypes had either been lost or otherwise discarded from the test programme. The raids on the factories accounted for 21 Me 262s; 11 more were wrecked in accidents or in action. The remaining 84 aircraft were disposed as follows:

I./KG51 (high-speed bombers)	33
Ekdo 262 (fighters)	15
Rechlin test centre	14
Retained at Messerschmitt for flight trials	11
Retained at Junkers for engine trials	1
At Blohm und Voss for conversion to two-seaters	10

With the stabilisation of the battlefront in the West early in September 1944, I./KG51 redeployed to airfields at Rheine and Hopsten just inside Germany. With the 13,000ft minimum-altitude embargo now lifted, the unit mounted pinpoint attacks against Allied positions. Typical of these raids was that on Grave airfield, home of 421 (RCAF) Squadron with Spitfires, on October 2. The unit reported:

"The attack on the airfield began at 1100hr with the dropping of anti-personnel bombs by a jet-propelled aircraft flying at 3,000ft. In this raid, three pilots were injured and one officer and six airmen suffered wounds of minor degree. At noon, the second attack came and it was wide of the mark. The third attack resulted in a number of deaths among personnel of the RAF Wing on the other side of the airfield and some Dutch civilians living in the vicinity suffered serious injuries."

Three days later another Canadian unit, 401 Squadron, exacted revenge. Sqn Ldr Rod Smith was leading a patrol of Spitfire IXs in the Nijmegen area, when he sighted an Me 262 approaching him head-on and about 500ft below. The Spitfires piled after the Me 262 and the latter evaded violently before it was finally shot down, killing the I./KG51 pilot.

From this and other encounters, Allied fighter pilots learned that although they could not match the Me 262 in terms of maximum horizontal speed, if they had an altitude advantage they could convert this into sufficient speed to overhaul the jets. A further advantage enjoyed by Allied fighter pilots was the newly introduced predictor gunsight (Gyro Gunsight II in the RAF, K-14 in the

ABOVE **Me 262A-1a fighters of the training unit *Ergänzungsjagdgeschwader 2* operating from Lechfeld in October 1944. Note the *Kettenkrad* tractor used to move the aircraft, an immaculate example of which is exhibited in the Deutsches Museum in Munich.**

USAAF) which automatically calculated the deflection angle needed to engage a turning or a crossing target. The device greatly increased the effectiveness of Allied air-to-air gunnery, especially during fast manœuvring combats against German jets.

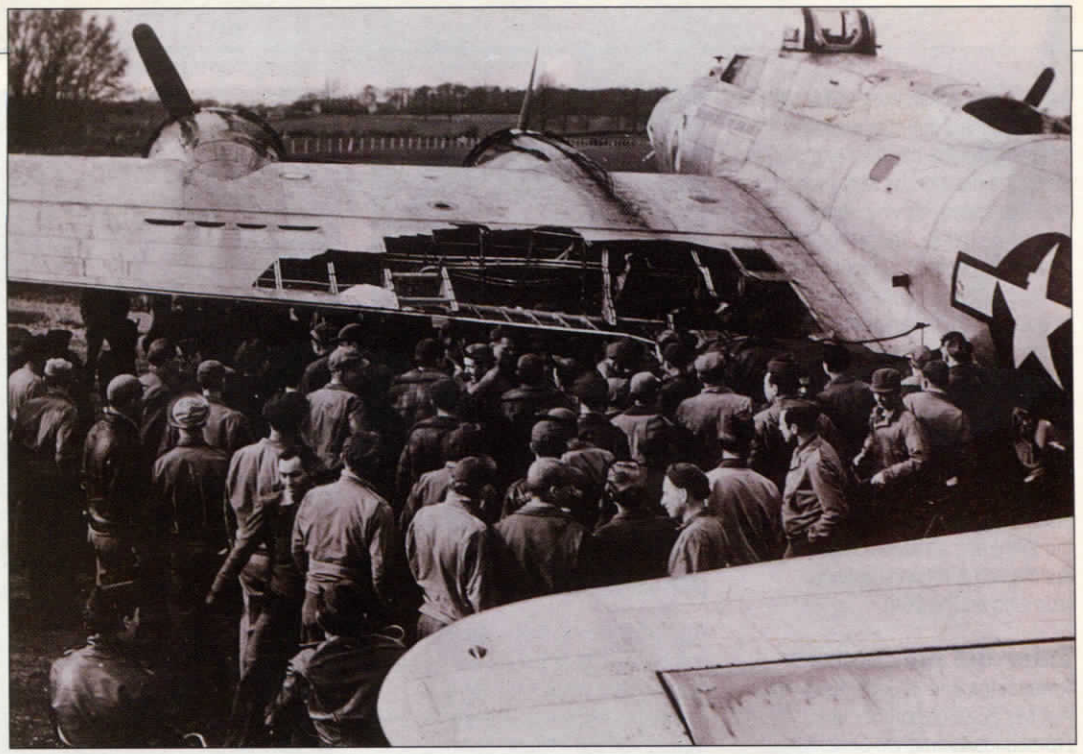
First Fighter Gruppe Deployed

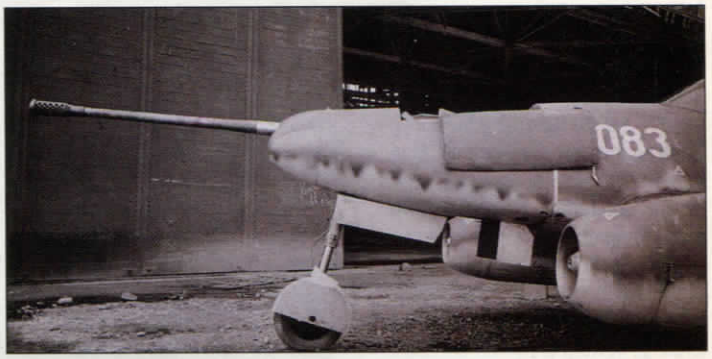
In September 1944 the Führer rescinded his order that all new Me 262s should go only to Blitzbomber units. That month production Jumo 004 engines became available in quantity, and 91 Me 262s were delivered to the Luftwaffe.

Kommando Nowotny (as Ekdo 262 was renamed) received 23 new aircraft with production engines. With a strength equivalent to a fighter Gruppe, it was declared operational on September 30. Four days later the unit moved to the forward airfields at Achmer and Hesepe in western Germany to commence operations.

In the event the Me 262's initial combat deployment in the fighter role near the battlefront proved a failure. Although the production Jumo 004 B-4 engines were more reliable and less sensitive to rough treatment than their predecessors, they were still short-lifed and gave considerable trouble. Also, like any other new aircraft type, the Me 262 airframe had its share of "bugs". One problem stemmed from the use of synthetic and reclaimed rubber in the aircraft's tyres, all that was available at the time. The jet fighter touched down at around 120 m.p.h., faster than any previous German combat type. Heavy landings often resulted in a tyre blowout, followed by a high-speed departure from the runway causing damage to the undercarriage. Other Me 262s were lost when the turbojet exhaust note induced oscillations on the resonant frequency of the tailplane, leading to catastrophic structural failures in flight.

Allied fighter pilots quickly discovered the jet fighter's Achilles' Heel: its vulnerability while flying at low speed immediately after take-off or on the landing approach. To prevent attacks on the slow-flying jets, each airfield had a *Staffel* of Focke-Wulf Fw 190D fighters to cover the Me 262s after take-off and during the landing approach. Also, numerous 20mm and 37mm light anti-aircraft guns were positioned along the climb-out and landing approach lanes, further to discourage attacking Allied fighters.





ABOVE A B-17 returns from a mission with heavy damage to the port wing, probably inflicted by a single hit from the Me 262's 30mm cannon.
RIGHT In an attempt to increase the Me 262's firepower even further, a Rheinmetall-Mauser MK214A 50mm cannon was faired into the nose, replacing the four 30mm cannon. The gun was unreliable and unwieldy and not adopted for service.

These measures made life less dangerous for the Me 262s at low altitude, but Allied standing patrols over jet fighter airfields remained a serious problem. An Me 262 caught in the climb was somewhat slower than a piston-engined fighter diving on it from above.

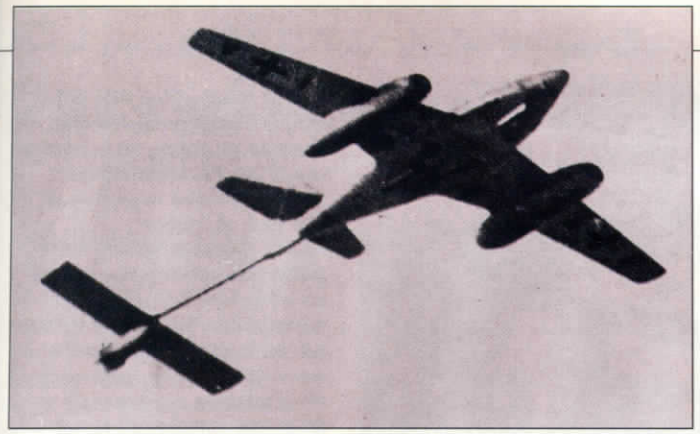
On October 7, 1944, Kommando Nowotny scrambled five Me 262s — the largest number yet sent into action simultaneously — to engage American bomber formations making for targets in central Germany. Cruising over Achmer at 15,000ft in a P-51, Lt Urban Drew of the 361st Fighter Group watched as a pair of jet fighters commenced their take-off runs. He waited until the enemy aircraft were airborne, then rolled his fighter on its back and went down in a high-speed dive. With his wingman following, Drew rapidly caught up with the Me 262s and shot down both before they reached fighting speed. Another jet fighter was lost during a separate action. Thus the first multi-aircraft action by Kommando Nowotny cost it three Me 262s destroyed and one pilot killed, in return for three bombers.

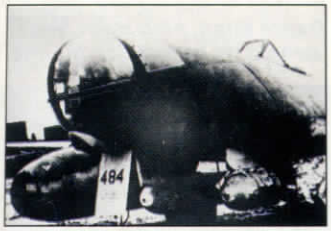
In the course of its first full month of operations on the Western Front, Kommando Nowotny claimed the destruction of four heavy bombers, 12 fighters and three reconnaissance aircraft. In achieving this, the unit lost six Me 262s in combat. A further seven '262s were destroyed and nine damaged in accidents or following technical failures.

Worse followed. On November 8, Walter Nowotny was caught up in a low-level dogfight with Mustangs. Then, for reasons that are unclear, his Me 262 dived into the ground and the famous pilot was killed. Generalmajor Adolf Galland happened to be on an inspection visit to Achmer that day, to determine why the Me 262s had not been more successful. Galland saw enough to realise that Nowotny had been given an impossible task. The latter had been expected to introduce a new and revolutionary fighter into combat, in an area where the enemy held almost total air superiority. The training of many of the pilots had been rushed, aircraft serviceability was poor and rarely could the unit fly more than five sorties in a day.

Galland ordered Kommando Nowotny to withdraw to Lechfeld for further training, and to have its aircraft modified to overcome defects. He saw that it had been a mistake to send the new fighter into combat prematurely and in such

The lack of capable instructors, a high accident rate, poor serviceability, frequent spells of bad weather and regular attacks by enemy fighters greatly slowed the pace of Me 262 pilot training. These Me 262A-1a fighters await a training flight at Lechfeld in late 1944.





ABOVE The *Deichselschlepp* airborne trailer was tested as a means of increasing the Me 262's bomb load. Deemed unsafe, it was abandoned. LEFT One Me 262A-2a/U2 was equipped as a two-man bomber, but production was switched to provide fighters.

BELOW An Me 262A-1a/U3 of the tactical reconnaissance unit Kommando Braunegg. Note the large bulge on the top side of the nose, covering the film magazine of the port camera.

small numbers. To achieve the required impact on the enemy, a far larger force was necessary.

Once in the relative safety of Bavaria, Kommando Nowotny was re-designated as the IIIrd Gruppe of *Jagdgeschwader* 7, under its new commander Major Erich Hohagen. It now formed the core unit of the first full jet fighter Geschwader, established at 90 aircraft. The Gruppe had now to share its experienced pilots with the other two Gruppen to spread the level of expertise in operating the jets.

By the close of 1944 the two Gruppen of Kampfgeschwader 51 were operating about 50 jets in the fighter-bomber role, mounting frequent attacks on Allied airfields and troop positions in France, Holland and Belgium. Owing to the small tonnage of bombs carried and the poor accuracy of the bombing, however, their raids achieved little.

Bomber Pilots, Fighter Aircraft

In the autumn of 1944 another bomber unit, Kampfgeschwader 54, began converting to the Me 262. This unit was redesignated as KG *(Jaeger)* 54 and some accounts have mistakenly linked this move to Hitler's earlier insistence that the type be used initially as a fighter-bomber. The issues now were quite different, however, as KG(J)54 was to operate the Me 262 in the fighter role.

The issue of which pilots should fly the Me 262 in the fighter role was a matter of fierce disagreement between Galland, the Inspector of Fighters, and *Oberst* Gordon Gollob on the Fighter Staff. To shorten training time and save resources, Luftwaffe trainee dayfighter pilots had received only a partial training in instrument flying whereas heavy fighter, bomber and reconnaissance pilots received full training in instrument flying. By the autumn of 1944 most conventional bomber units had disbanded, leaving a surplus of unemployed bomber pilots. The designated role of KG(J)54 was that of bad weather interception, for which an ability to fly well on instruments was essential. Karl "Quax" Schnörrer explains the issues as he saw them:

"Galland and Gollob were not friends. Of the two I preferred Gollob, he was the greater man, a clear thinker. Galland was just a fighter pilot. Gollob wanted to get the '262 into operation as rapidly as possible, but with well-trained pilots. So he proposed to convert bomber pilots with training in blind-flying on to the '262. And at the same time, some fighter pilots were sent for training in blind flying. In my view, all '262 pilots needed the full blind-flying training. We [JG7] lost a lot of people because they descended into cloud, were unable to fly on instruments, became disorientated and entered high-speed dives from which they could not recover."

Much to Galland's chagrin, Gollob's proposal was accepted. Thus JG7 took pilots from the dayfighter force, while KG(J)54 used experienced pilots from the defunct conventional bomber force.

By the close of 1944, Me 262s had appeared in a couple of new roles. *Nachtjagdgeschwader 11* received about four Me 262s fitted with radar for nightfighter operational trials. Initially single-seat Me 262s were used in this role, but handling the jet fighter and the radar at night proved too much for one man. Later nightfighter conversions used the Me 262B two-seat trainer. Based at Burg near Madgeburg, the Me 262s' main prey was Mosquitoes making almost nightly attacks on the German capital.

Also at this time a short-range reconnaissance unit, *Kommando Braunegg*, was formed with five Me 262s. These carried a single 30mm cannon in the nose, and two Rb 50/30 cameras in a split pair looking vertically downwards, as well as a large teardrop fairing on either side of the nose forward of the cockpit to accommodate the film magazines. A window was set into the cockpit floor so the pilot could align the cameras.

Deployment Delays

By the beginning of 1945 there was no shortage of Me 262s in the Luftwaffe. Deliveries exceeded 500 and new aircraft, most of them fighters, were leaving the assembly lines at a rate of about 36 per week. Yet the Luftwaffe Quartermaster General's records for January 10, 1945, show only 61 Me 262s serving with operational units:

I. and II./KG51 (fighter-bombers)	52
10./NJG11 (night-fighters)	approx 4
Kommando Braunegg (short-range recce)	5

On that date no Me 262 day fighters were recorded as serving with operational units. This was four months after Hitler had released the Me 262 for service in the fighter role. What had gone wrong?

Probably about 180 Me 262s were distributed amongst the units working-up to go into action or training pilots; the three Gruppen of Jagdgeschwader 7, the bad weather fighter unit KG(J)54, the fighter conversion unit *III./Ergänzungs JG2*, and the various test centres. Also by then about 150 Me 262s had been destroyed in the air or on the ground by enemy action, or in accidents.

For many reasons, the Me 262 pilot conversion programme slipped badly. There were few competent instructors and the accident rate was appalling. The weather was often bad, with spells of dense cloud that limited flying. Whenever the skies did clear, the USAAF launched major attacks. Hundreds of USAAF fighters fanned out over Germany looking for trouble, bringing Luftwaffe flying training to a halt. When airfields were discovered to be operating jet aircraft, they came under repeated attack. Also, standing patrols of Allied fighters hovered over these airfields, waiting to pounce on jets getting airborne. With so much harassment, jet pilot conversion training took much longer than expected.

Leutnant Walther Hagenah was one of the pilots posted to III./JG7 to convert to the Me 262. He described the poor training he received:

"Our 'ground school' lasted one afternoon. We were told of the peculiarities of the jet engine, the danger of flaming-out at high

Me 262A-1a WNr 500491 wears the markings of *9 Staffel* of *Jagdgeschwader 7*, based at Parchim in early 1945. The JG7 leaping greyhound insignia is visible on the nose.

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altitude, and their poor acceleration at low speeds. The vital importance of handling the throttles carefully was impressed on us, lest the engines caught fire. Yet we were not permitted to look inside the cowling at the jet engine itself — we were told they were very secret and we did not need to know about them!

"By the time I reached [the Gruppe] there were insufficient spare parts and insufficient spare engines; there were even occasional shortages of J-2 fuel. I am sure all of these items existed and production was sufficient, but by that stage of the war the transport system was so chaotic that things often failed to arrive at front-line units."

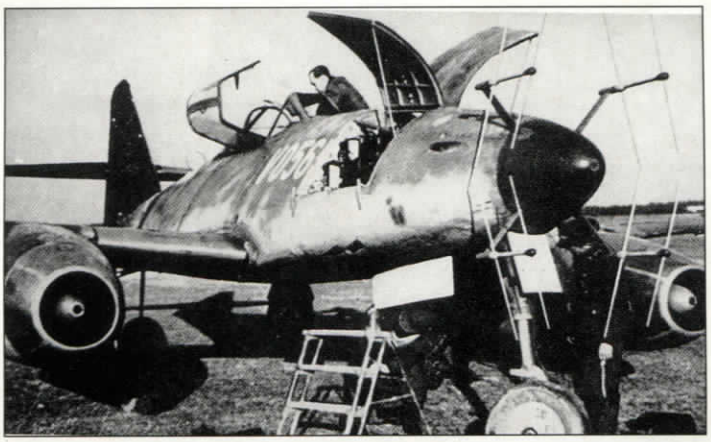
Hagenah received one flight in an Me 262B two-seat trainer, and was then sent to fly solo in a single-seater. After that his further training was haphazard, as he could fly a jet fighter only if it was not required for a combat mission.

Hagenah had a couple of years' experience as a fighter pilot and had received a full training in instrument flying, so he could cope with the Me 262's idiosyncrasies, unlike the less experienced pilots sent to the unit:

"In our unit, we had some pilots with only about 100hr total flying time. They were able to take off and land the aircraft, but I had the definite impression that they were little use in combat. It was almost a crime to send them into action with so little training. These young men did their best, but they had to pay a heavy price for their lack of experience."

During February 1945, Me 262 fighter-bombers went into action several times against Allied troops advancing into Germany. Their largest attack took place on the 14th, when KG51 flew a total of 55 jet fighter-bomber sorties to attack British troops advancing near Cleve. Yet even on that day, the greatest effort it ever mounted, the unit achieved little. The total bomb load carried, about 27 tonnes, inflicted surprisingly little damage on military targets. RAF fighters shot down three jets.

On February 9, the first of the bad weather fighter units, KG(J)54, went into action. Ten Me 262s from I Gruppe scrambled to engage a multi-pronged attack by USAAF bombers on targets in central Germany. The pilots were poorly trained in fighter operations, however, and the interception was badly handled. The escorting Mustangs shot down six Me 262s in short order. Five jet pilots were killed, including the commander *Oberstleutnant* Volprecht von Riedesel. The jets managed to shoot down only one B-17.



LEFT A single-seat Me 262 fitted experimentally with *Neptun* airborne interception radar and nose-mounted aerials, tested in action at the end of 1944.
BELOW A disconsolate Me 262A sits among the rubble at what had been a major supply station and jet fighter lair at Erding near Munich in June 1945. This previously unpublished photograph is from the official pictorial history of the USAAF 85th Air Depot Wing, who made the airfield its base after the war.

Two weeks later, on February 25, both Gruppen of KG(J)54 suffered a severe drubbing. Sixteen jets were scrambled to engage an American formation, and, as they emerged from cloud, Mustangs pounced on them from above and shot down six. Later in the day USAAF fighters strafed their airfield at Giebelstadt and destroyed five more. Two Me 262s were destroyed in accidents, bringing the day's total losses to 13 aircraft. Thereafter the two Gruppen withdrew from operations for further training, and from then on played little part in the conflict.

The Final Battles

Only in the third week of February 1945 was III./JG7 ready to go into action in strength. On the 21st 15 of its Me 262s fought an inconclusive action near Berlin with Mustangs of the 479th Fighter Group. These jets behaved differently from those previously encountered, as the American report pointed out:

"Bounce was directed at Red Flight, as squadron was making a shallow turn to the left from an easterly direction, and came from three o'clock position at our level by four Me 262s flying the usual American combat formation, looking like P-51s with drop tanks. Our Red Flight broke into jets but they crossed in front of our flight up and away. A second flight of four Me 262s flying in American combat formation then made a bounce from the rear, six o'clock high. Our flight turned into this second Me 262 flight and the Me 262s broke climbing up and away. At this time, the first flight of Me 262s came back on us again from above and to the rear. We broke into this flight and this kept up for three or four breaks, neither ourselves nor Jerry being able to get set or close in for a shot. Each time we would break, they would climb straight ahead, outdistancing us. Within the Jerry flight the number 4 man, while turning, would fall behind and slightly above, so that it was necessary to take on this number 4 man or he would slice in on our tail if our Flight would take on the rest of the Jerry flight."

The action ended without loss on either side. The American pilots noted that their German counterparts were "aggressive and experienced. They were not caught in a turn, and if they were caught in such a position would roll out and climb up and away. It was impossible to catch or climb with them." The report illustrated well the sort of inconclusive action likely to result when well-handled Me 262s confronted well-handled Mustangs.

Only in March 1945 did Me 262 dayfighter units start to mount large-scale attacks on American bomber formations. On the 3rd of the month, III./JG7 flew 26 Me 262 sorties in response to the USAAF attacks on Magdeburg, Brunswick, Hannover and Chemnitz. The jet pilots claimed the destruction of seven bombers and two fighters, in return for one Me 262 lost. American records list nine bombers and eight fighters lost on that day.

The Me 262 fighters were next in action on March 18, when a large American force made for Berlin. A total of 37 jet fighters took off to engage the raiders, and 28 went into action. The Me 262s claimed 12 American bombers and one fighter destroyed, but American records state that only eight bombers fell to the jets. Two Me 262s were lost. During each of the following seven days there were pitched battles between Me 262s and American formations, with a similar ratio of losses between the two sides.

"Even on this most successful of days, the losses the Me 262s inflicted amounted to less than one per cent of the huge Allied raiding force. The effect was no more than a pinprick"

The USAAF bombers were the main targets for the Me 262 attacks, but they were not the only ones. By this stage of the war, the RAF also mounted frequent daylight attacks on Germany. On March 31, a force of 460 Avro Lancasters and Handley Page Halifaxes set out for the U-boat assembly yards at Hamburg. Near the target, Me 262s delivered a sharp attack, shooting down three Halifaxes and four Lancasters before the escorts drove off the assailants. Also on that day, jet fighters engaged more than a thousand USAAF heavy bombers attacking Zeitz, Brandenburg, Brunswick and Halle.

Me 262 fighters flew 58 sorties that day, the greatest number ever flown by the type. On the available evidence, it appears they shot down 14 bombers and two fighters, for a loss of four. That victory score marked the high-watermark of achievement for the Me 262 fighter units; it would never be surpassed. Yet, even on this most successful of days, the losses they inflicted amounted to less than one per cent of the huge Allied raiding force. The effect was no more than a pinprick.

Elite Fighter Unit

Early in April *Jagdverband 44*, commanded by Generalmajor Adolf Galland in person, became operational from Munich/Reim. Many conventional dayfighter units were confined to the ground for want of fuel, so Galland drew in several "big name" fighter aces — Johannes Steinhoff, Günther Lützow, Gerhard Barkhorn and Willi Herget.

On April 5, JV44 flew its first interception mission, when five fighters took off and claimed the destruction of two enemy bombers. Allied ground forces were deep inside Germany and had overrun much of the Luftwaffe fighter control organisation. Harassed from take-off to landing, even the talented pilots of JV44 were able to achieve little. Rarely could the unit fly more than ten sorties in a day, or shoot down more than five Allied aircraft. The entry of JV44 into action at the very end of the war passed pretty much unnoticed by the Allies.

On April 9, the last date for which details are available, Luftwaffe operational units had about 180 Me 262s on strength as follows:

JG7 (fighters)	76
JV44 (fighters)	about 30
KG(J)54 (fighters)	37
KG51 (fighter-bombers)	21
NJG11 (nightfighters)	9
Nahaufklärungsgruppe 6, (tactical reconnaissance)	7

The final large-scale air action to involve Me 262 fighters was on April 10, 1945, when 55 jets took off to engage more than 2,000 USAAF heavy bombers and escorts attacking targets in the Berlin area. The Me 262s claimed the destruction of ten B-17s and seven escorts and these find support in American records. In achieving this unimpressive score some 27 Me 262s were shot down with 19 pilots killed and five wounded. Many were caught as they returned to their airfields short of fuel, after they had slowed for the landing approach.

By now Allied troops were advancing rapidly through Germany, and one by one the jet fighter bases had to be abandoned. Me 262 operations underwent a rapid decline, and by the end of April they had virtually ceased altogether.

Combat Summary

By the end of April 1945, more than 1,200 Me 262s had been delivered to the Luftwaffe. Of those, only a small proportion saw action. A few figures will illustrate what the Luftwaffe achieved from that huge industrial effort:

Greatest number of Me 262 fighter-bomber sorties in a single day (Feb 14, 1945)	55
Greatest number of Me 262 fighter sorties in a single day (March 31, 1945)	58
Greatest number of Me 262 aerial victories in a single day (March 31, 1945)	16
Greatest number of Me 262s serving with front-line units (April 9, 1945)	about 180

None of those figures is impressive, yet in each case these were the best days in the Me 262's combat career. The rest of the time, the figures were lower. Certainly the type displayed superb performance, but that alone could not enable it to overcome the overwhelming numerical odds it faced.

PILOT'S PERSPECTIVE

A Sinister Beauty

Me 262A-2A WNr 112372, given the RAF serial VK893 for evaluation, takes off from Farnborough on October 29, 1945.

Shortly after the war, the Me 262 was extensively tested by the Royal Aircraft Establishment. CAPT ERIC M. BROWN flew the type in the trials and recounts what it was like to fly

I HAD ARRIVED with the RAE team from Farnborough at Schleswig airfield just after the capitulation and saw for the first time Messerschmitt's much-discussed fighter — actually an Me 262B-1a/U1 (WNr 111980) — an adaptation for night-fighting of the tandem two-seat training version. I was immediately struck by its beautiful yet sinister lines which reminded me vividly of a shark.

My first cursory glance around the cockpit of the Me 262 revealed what was, by 1945 standards, a complex but neat layout. The dashboard carried the flight instruments on the left and the engine gauges on the right. The left console carried the throttles, fuel cocks, trimmers, ancillary controls and their emergencies, while the right had the electronics, starters and radio equipment. All this compared closely with British practice. The fuel was 87-octane petrol with a five per cent mix of lubricating oil.

Once the rather complicated rigmarole of engine starting had been completed, the process of taxying could begin. This called for very restrained movement of the throttles to ensure that the limiting jetpipe temperature of 650° was not exceeded, but once 6,000 r.p.m. were reached the governor cut in and throttle movement could be accelerated. The view from the cockpit was excellent and every upper part of the aircraft was within the pilot's field of vision. The mainwheel brakes were operated, as on all German aircraft, by toe action, and the Me 262 embodied the somewhat odd feature of a hand-operated nosewheel brake.

The take-off preparations were simple enough. The elevator had to be trimmed nose-heavy, and the flaps set at 20°, this angle being indicated on each flap upper surface.

There was an elevator trimmer gearing lever mounted on the control column, and this had a coarse setting for take-off and landing, and a fine setting for high-speed flight. After lining up the aircraft on the runway, the engines were opened up to 8,500 r.p.m. on the brakes, and a check was made that the *Zwiebel* (Onion), as the exhaust cone was dubbed, was protruding from each orifice. Full power of 8,700 r.p.m. was then applied and a quick check was made on jetpipe temperature, burner pressure and fuel pressure. A five per cent drop in fuel pressure meant an aborted take-off. At full power fumes or smoke invariably penetrated the cockpit, and as the canopy had to be closed for take-off the sensation was, to say the least, disturbing. The nosewheel was raised at 100 m.p.h., and the aircraft pulled gently off at 124 m.p.h. Once airborne, it was necessary to raise the undercarriage and reduce flap deflection by 10°, immediately easing the stick forward until momentum built up to that all-important single-engine safety speed of 180 m.p.h.

The take-off run was long, and the aircraft gave one the feeling that it was underpowered. If one throttle was cut at 160 m.p.h. the Me 262 went into a violent diving turn. Full rudder was required to counteract the swing and roll, and backward stick pressure had to be applied to keep the nose up. Initial climbing speed was 286 m.p.h. and from 185 m.p.h. upward, the Me 262 really took the bit between its teeth and became a thoroughly exciting aeroplane to fly. The Jumo turbojets tended towards the temperamental above 4,000m (13,000ft), at which altitude the fuel pumps had to be switched on to sustain combustion, and above 9,000m (29,500ft) it was considered inadvisable to reduce revs below 6,000 per minute as to do so was to ensure a flame-out, and restarting could not be attempted above 4,000m.

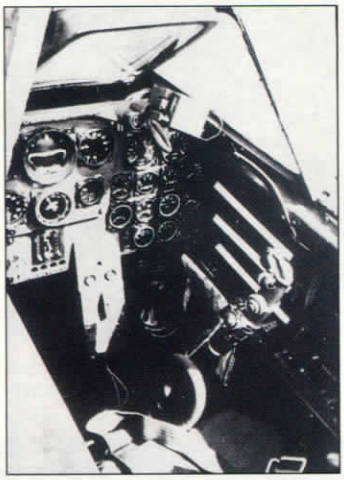
The normal range of flight characterisitics from aerobatic manœuvres to the stall revealed the Me 262 as a very responsive and docile aeroplane, leaving one with a confident impression of a first-class combat aircraft for both fighter and ground-attack roles. Harmony of control was pleasant, with a stick force per g of 6lb at mid-c.g. position and a roll rate of 360° in 3·8sec at 400 m.p.h. at 5,000ft. Maximum speed attainable in level flight on one engine was about 310 m.p.h., and this called for application of about one-third full rudder.

For landing the undercarriage could be lowered at 310 m.p.h., but it was preferable to reduce speed to 250 m.p.h. and throttle back to 5,000 r.p.m., thus counteracting the nose-up trim change as the wheels came down. I found it best, after lowering the undercarriage, to open up to 6,000–7,000 r.p.m. and lower the flaps 20° at about 225 m.p.h., turning in at 185 m.p.h. When on finals it was advisable to apply full flap at 155 m.p.h., reducing speed to 125 m.p.h. for crossing the airfield boundary. The Me 262's landing run was long and was always accompanied by that unpleasant suspicion of fading brakes that one had with all German aircraft of that period.

In my view, the Me 262 was unquestionably the foremost warplane of its day, a hard hitter which outperformed anything that we had immediately available, and which — fortunately — was not available to the Luftwaffe in sufficient numbers to affect the course of events in the air over Europe. A

ABOVE The variant Capt Brown flew for his report on the type was an Me 262B two-seat nightfighter. This example is seen at Freeman Field in the USA after the war where it was used by Col Harold Watson and his team for USAAF evaluation.

BELOW The "complex but neat" cockpit of the Me 262.



The Luftwaffe point of view

A NUMBER OF FORMER Me 262 pilots spoke to Dr Alfred Price about their impressions of the type after their initial flights:

Oberleutnant Günther Wegmann, Erprobungskommando 262, Kommando Nowotny, JG7:
"The Me 262 was a fine aircraft to fly. I had no difficulty in handling it. The difficulties were technical, with the unreliability of the engines and so on. Adolf Galland has said 'I had the feeling that angels were pushing'. Not only Galland said that — all the pilots did.

"After take-off, things happened fast. As soon as the flaps and undercarriage were up one was already at 300km/h (187 m.p.h.). Navigation was a problem, because before one had collected one's ideas after take-off, one was already several kilometres away from the airfield."

Leutnant Karl "Quax" Schnörrer, Erprobungskommando 262, Kommando Nowotny, JG7
"There was a wonderful feeling of effortless speed and power. At first the engines flew for only about 12 hours, then the turbines had to be changed. One had to be very careful in handling the throttles, had to advance them very, very slowly or there was a risk of an engine fire. At high altitude one had to be careful not to throttle back too far, or the engines would flame out.

"Beforehand other pilots told me that the Me 262 is not difficult to fly. But do everything in the climb, not the descent. If you let the aircraft get into a dive and the speed rose over 1,000km/h (620 m.p.h.), you might not get it out of the dive.

"Initially the most serious single cause of [Me 262] accidents was pilots misjudging their landing approach and trying to throttle up or down, with the result that the engines cut altogether. That was the cause of many aircraft losses in Kommando Nowotny. Every landing had to be a 'spot' landing. My technique was to come in at 800m (about 2,600ft) going downwind, put the undercarriage and flaps down, turn in on the base leg and throttle back, then turn in and land."

Leutnant Walter Hagenah, JG7, pictured below
"I was greatly impressed by the '262. The take-off was easy, the visibility from the cockpit was marvellous after the Bf 109 and the Fw 190. There was no torque during take-off.

"The only real problem I found was that when I came in to land I came in with the normal speed, expecting the speed to fall away rapidly when the throttle was closed. But the '262 was such a clean machine. The important thing was to make up one's mind in good time whether one was going to land or throw away the approach and try another. Once one had throttled back and the engine revolutions fell too low, the engines would not accelerate quickly enough if one tried to open the throttle and go round again."

■ See also Hugh Morgan's two-part series on the post-war USAAF testing of the Me 262, *Watson's Whizzers*, in the December 1994 and January 1995 issues of *Aeroplane*

Museum & replica Me 262s

WNr 110305 An Me 262B-1a/U1 which flew as "Red 8" while in service with 10./NJG11 based at Magdeburg. Taken on charge by the Royal Aircraft Establishment (RAE) at Schleswig and flown to Farnborough on May 9, 1945, it was given Air Ministry number 50 and flown on radar and tactical trials at the Central Fighter Establishment (CFE) at Tangmere. Moved to RNAS Ford on July 6, 1945, then on to 71 Maintenance Unit (MU) at Slough the following year. The aircraft was sent to South Africa in March 1947, where it is currently on display at the National Museum of Military History at Johannesburg in its original colours, with black undersurfaces and black nacelles

WNr 110639 This Me 262B-1a two-seater was marked as "White 35" when it was earmarked for evaluation in the USA following the capitulation in May 1945. After a landing accident it was repaired and transported in *HMS Reaper* to America in July 1945, where it was evaluated by the Navy Armament Test Division at NAS Willow Grove, Pennsylvania. It was moved in 1993 to Herb Tischler's Texas Airplane Factory operation at Fort Worth, Texas, for use as a "pattern aircraft" for the company's Staffel of replicas. For the full story of the Texas replica Me 262s and the Me 262 Project, see Michael O'Leary's article *The Project* in the April 2003 issue of *Aeroplane*

WNr 111617 A photo-reconnaissance Me 262A-1a/U3, this aircraft was presented to Hughes Aircraft after being shipped to the USA in August 1945. Howard Hughes was determined to race the early jet in national air races, but was unable to obtain the necessary clearances from the authorities. The aircraft then moved on to the Glendale Aeronautical School in California, subsequently becoming part of the Planes of Fame Museum. In 2002 it returned to Europe to be restored in the UK on behalf of the Seattle-based Flying Heritage Collection

WNr 112372 This Me 262A-2a wore a "Red X" and the markings of 2./KG51 when it was captured at Fassberg in northern Germany in 1945. Allocated Air Ministry number 51 and the RAF serial VK893, it was extensively tested by the RAE at Farnborough, after which it was placed in storage. Subsequently the single-seat fighter was statically displayed at a number of RAF stations, before becoming a permanent exhibit at the RAF Museum, Cosford. The aircraft is due to be moved to the Milestones of Flight Hall at the RAF Museum, Hendon, to coincide with its opening in December 2003

WNr 500071 Piloted by Hans-Guido Mutke of 9./JG7, this Me 262A-1b landed at Dübendorf airfield in neutral Switzerland on April 25, 1945. The Swiss authorities conducted a thorough examination of the aircraft and prepared a technical report, but declined to place the jet in Allied hands. In August 1957 the Swiss government donated the aircraft to the Deutsches Museum in Munich, where it is still on display

WNr 500200 Delivered to 4./KG51 in April 1945, this Me 262A-2a was handed over to British Forces at Prague on May 7 of that year. Probably given the Air Ministry number 79, it was flown to the RAE from RAF Manston on September 6, 1945, where it was kept until August 1946. It was then placed on strength with 47 MU at Sealand. Three months later it was presented as a gift to the Australian War Museum in Sydney, where it was displayed until 1970, when it moved to the RAAF Central Flying School at Point Cook. It is currently under restoration at the Treloar Centre in Canberra

WNr 500491 Luftwaffe ace Heinz Arnold of II./JG7 scored nine victories in the Me 262, in addition to 42 kills in piston-engined aircraft. This Me 262A-1a was his personal aircraft until his death in another Me 262 in April 1945. This aircraft was being flown by Leutnant Müller, also of JG7, when it was captured on May 8, 1945. After its journey to the USA in July 1945 it was used for flight research at Wright Field, Ohio, where it was preserved. It was subsequently donated to the National Air and Space Museum in Washington DC, where it still resides

■ Two other Me 262s are known to have survived, the Werknummers of which are uncertain. The first, an Me 262A-1a, was given the US Navy Bu No 121442 and was the personal mount of Lt Robert Strobell, the officer given charge of the transportation of the Me 262s from Germany to the USA. It was evaluated by the US Navy at NAS Patuxent River, Maryland, in early 1946 and placed on a dump sometime in 1947. The aircraft was reprieved, however, and is now an exhibit at the USAF Museum in Dayton, Ohio.

The other possible survivor is an unidentified Me 262A known to have been at the Victory Air Museum in Mundelein, Illinois, during the 1970s. The aircraft's last known location was Abilene, Texas, where it is believed to have been undergoing restoration since the mid-1980s.

It is hoped the recently-airworthy Me 262 Project replica will return to the skies after repairs following a landing mishap in January 2003

JIM LARSEN

ABOVE **The Me 262 Project's two-seat replica, N262AZ, is painted in the colours of JG7 and has been given the spurious WNr "501241". It is seen here on its first full flight.**

MIKE HOOKS

ABOVE **Seen here displayed at the RAF Museum, Hendon, in April 1976, Me 262A-2a WNr 112372 is planned to become part of the museum's exciting new Milestones of Flight exhibition.**

ABOVE **Me 262A-1b WNr 500071 landed in Switzerland in April 1945 after a battle with Martin B-26 Marauders and is currently on display at the Deutsches Museum in Munich.**

FRANK B. MORMILLO

ABOVE **Me 262A-1a/U3 WNr 111617 stands on the ramp at Ontario Airport, California, in February 1968. After many years at the Planes of Fame Museum, it is now back in Europe.**