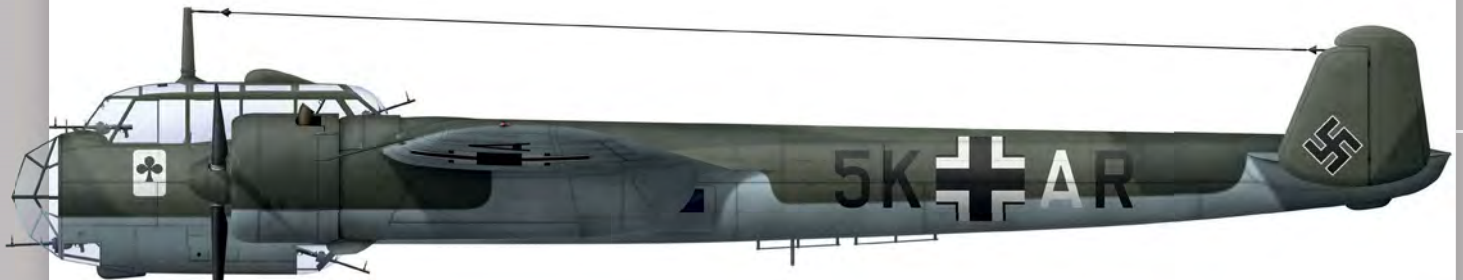


DATA BASE



Do 17Z-2 5K+AR, Werknummer 1160, of 7./KG 3 came down on the Goodwin Sands on 26 August 1940, and is believed to be the example recovered by the RAF Museum in 2013. CHRIS SANDHAM-BAILEY

17
IN-DEPTH
PAGES

DORNIER Do 17

WORDS: CHRIS GOSS



8./KG 2 taxis out in the Soviet Union during July-September 1941. The Do 17Z unit returned to Germany to convert to the Do 217 at the end of September 1941. VIA CHRIS GOSS

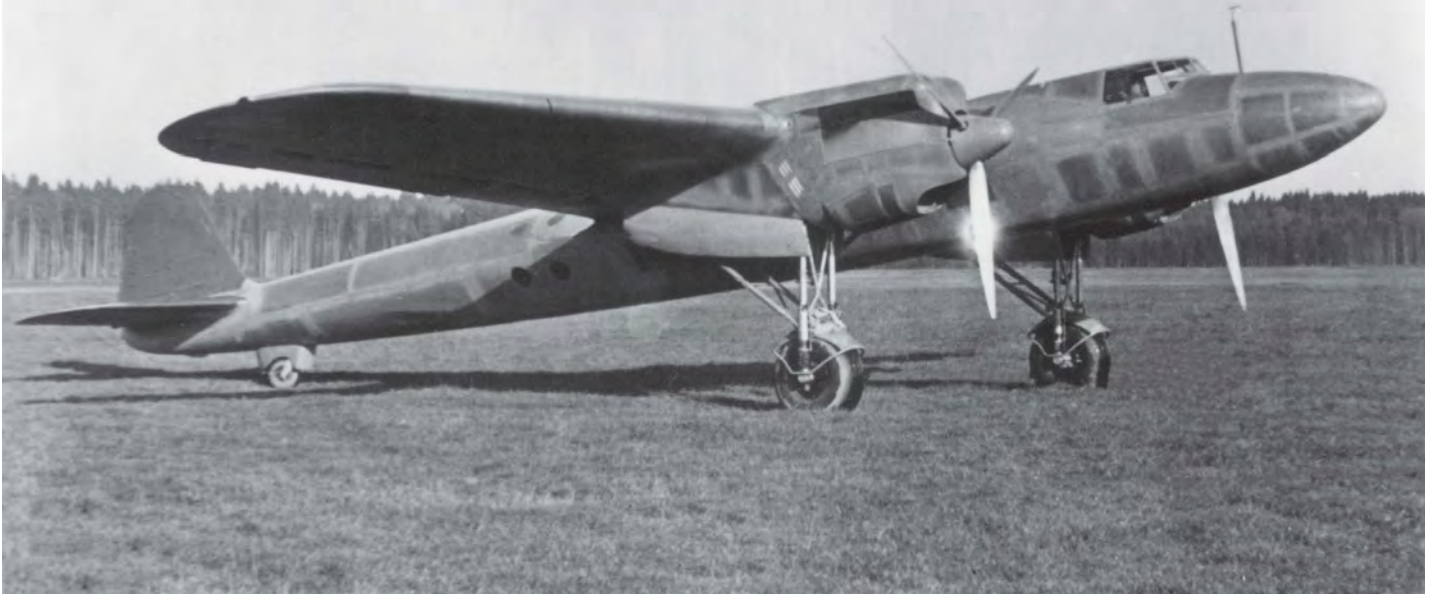
Development

Technical Details

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Insights

The first prototype: Do 17 V1 Werknummer 256, later registered D-AJUN, made its maiden flight on 23 November 1934. KEY COLLECTION



The Reichswehrministerium — later the Reichsluftfahrtministerium, or RLM — wrote to Dornier Werke in March 1933 expressing the wish for a “cargo aeroplane with special equipment”. Given that Germany was still officially prohibited from having a military air arm under the terms of the Versailles Treaty, the first two aircraft would be clandestinely military, and the second could later be intended for civil use by Deutsche Luft Hansa (DLH). The national carrier had a need for a high-speed mail-plane, capable of carrying six passengers, for its European express service. However, the requirements of the military, as expressed through the recommendations of the Erprobungsstelle test organisation at Rechlin, were deemed to take priority.

The original schedule for completion of the prototype Do 17s proved over-ambitious. A contract issued on 24 May 1933 set a deadline of 15 March 1934. In the event, the first prototype, the Do 17 V1, was

declared ready on 20 November that year. Unmarked but given Werknummer 256, it took to the air on 23 November, flying from Friedrichshafen-Löwental in the hands of Dornier chief pilot Egon Fath. At this point the aircraft had a single tail fin, but already, even prior to the V1 example beginning flight-testing, the decision had been taken to revise the design by incorporating twin fins. It is likely that this came about as a

“The needs of the military, as expressed through the Erprobungsstelle at Rechlin, took priority”

result of aerodynamic wind-tunnel tests.

Not until October 1935 was the Do 17 V1 officially revealed, being described for the sake of public consumption as a twin-engined commercial transport that could carry six passengers. By this stage, it had already been subject to alteration, not least concerning the main undercarriage, which suffered two collapses at Löwental in February and April 1935. The

aerodynamic design with twin liquid-cooled BMW VI engines met the DLH requirement but also enabled it to achieve speeds nearly 60mph superior to other aircraft entering service.

Now with twin tail fins, the Do 17 V2, registered D-AHAK, made its maiden flight on 18 May 1935. From 9 October to 7 November, it was with DLH for testing. The airline was pleased with the aircraft’s speed and mail-carrying potential,

but quickly concluded that the design was impractical for passengers and rejected it, something that, in truth, had most likely become clear before the official testing phase.

The saviour of the Do 17, so many accounts would have it, was Flugkapitän Robert Untucht, who was working for DLH as its liaison with the RLM. Untucht flew one of the prototypes and was impressed by its handling qualities and performance,

suggesting that, with certain modifications, the aircraft could be a better bomber. The story goes that he persuaded Dornier and the RLM of this, though the precise extent of his influence is difficult to determine. After all, the Do 17 had been conceived with military uses in mind. What is certain is that test pilots from Rechlin flew the V1 and V2 examples for the first time during an evaluation at Löwental in June 1935, after which additional changes included an enlarged tail to improve directional stability. That August, the V2 went through intensive testing at Rechlin and performed favourably. The third prototype, the V3, flew on 19 September and was rapidly delivered to the Rechlin testers as well.

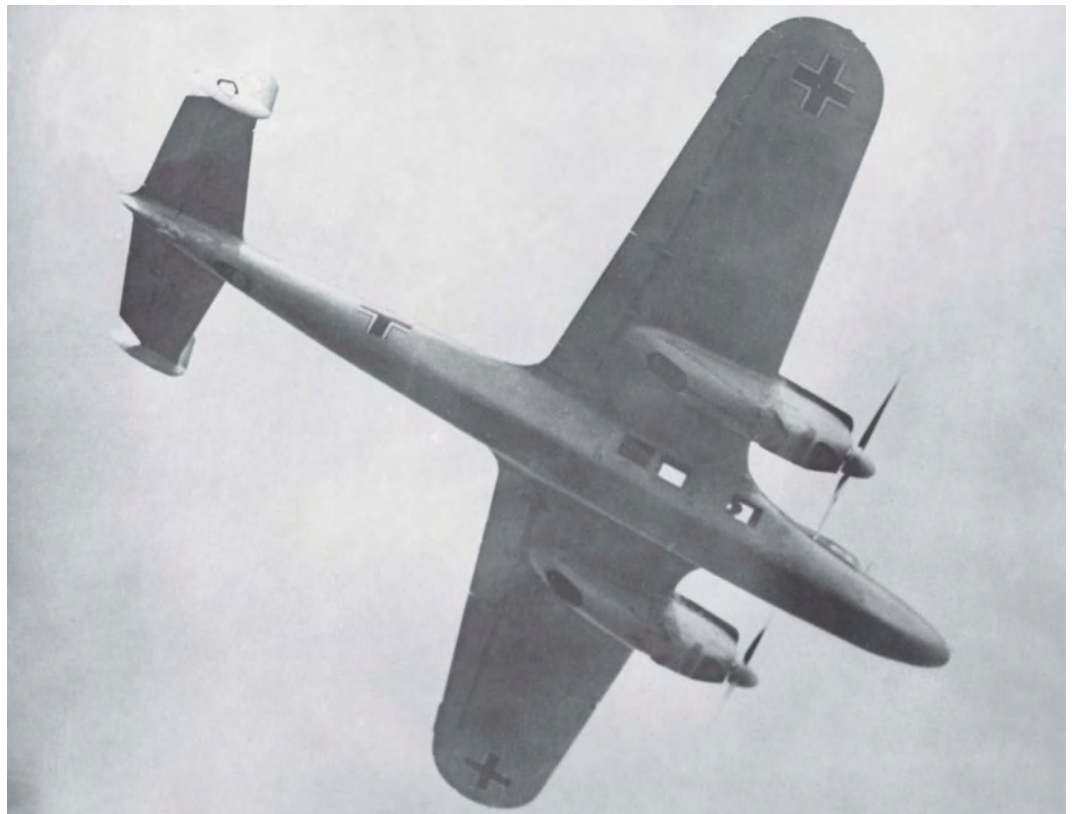
By the year’s end, the career of the Do 17 V1 had come to an end. Converted to twin-tail form and registered D-AJUN, it crashed on 21 December 1935 following an engine failure, the four crew escaping with injuries. A replacement V1 model was ordered, flying on 13 June 1936. The previous month, reconfiguration of the V2 to full

military specification had been completed, the aircraft taking to the air as such on 7 May. The passenger-carrying aspects, such as the portholes, were removed and deletion of the forward passenger compartment allowed an expansion of the flight deck and the fitting of a bomb bay. Aside from the medium bomber role, reconnaissance functions were foreseen.

A succession of other Do 17 prototypes was built. The V4 and V5 testbeds were identical, apart from the latter being fitted with Hispano-Suiza engines, while the V6 was intended as a transport for the RLM. Its speed meant defensive armament was considered superfluous. Nevertheless, as well as a partly glazed nose, the V7 included a fuselage-mounted blister behind the cockpit and was armed with a single 7.9mm machine gun. This aircraft was the prototype for what would be the Do 17E-2 bomber and the V8 likewise for the Do 17F-1 reconnaissance aircraft.

Fitted out as a military aircraft and, like the V6, intended as an RLM transport, the V9 saw the overall nose length being reduced, the nose glazing increased, the fuselage-mounted blister refined and the vertical tail surfaces enlarged. The V10 became another reconnaissance aircraft prototype, following on from the V8, as did the V11, which was the predecessor to the production F-2 model. The V12 — a prototype for the E-2 version — and V13 served as flying testbeds for the DB600 series of engines. The last of the original prototype run, the V14, flew on 15 December 1936, after which the Do 17E and F began to be mass-produced. However, seven more went on to be built, up to the V21 in July 1937.

The first of three pre-series prototypes for the Do 17M series, the DB600-powered MV1, was an especially notable machine. Registered D-AELE, in July 1937 it participated in the International Military Aircraft Competition in Zürich where it won the Circuit of the Alps, showing how contemporary fighters might have difficulty in catching it. Bramo 323 power was then used for both the MV2 and the more definitive MV3.

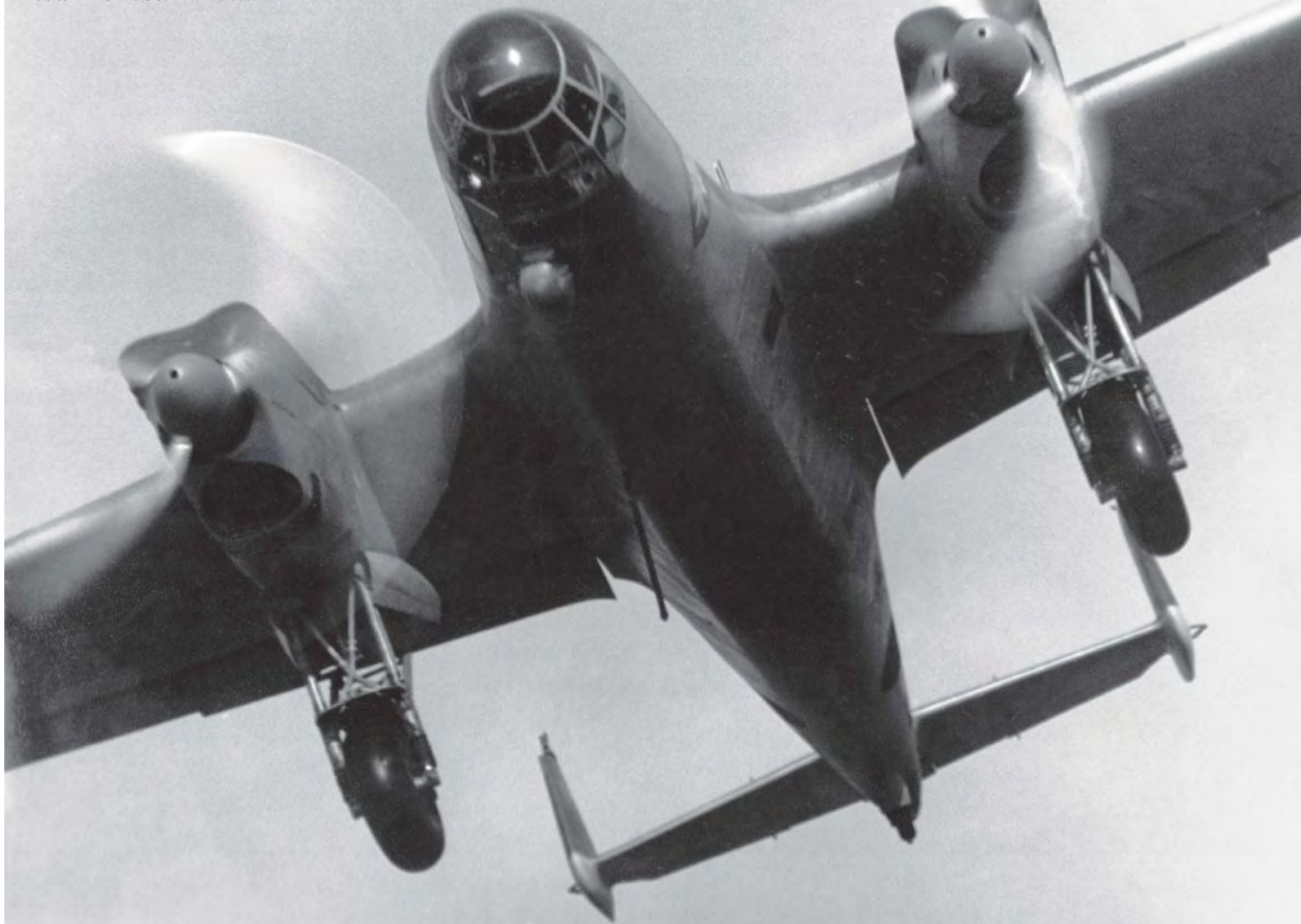


TOP: The V2, Werknummer 257 (D-AHAK), differed visibly from the V1 by virtue of the twin-tail arrangement. Both were powered by BMW VI engines. KEY COLLECTION

MIDDLE: This aircraft is either the Do 17 V6 or the very similar V9, displaying the underwing passenger cabin windows. KEY COLLECTION

ABOVE: Do 17MV1 Werknummer 691, which became D-AELE, appeared in Zürich during 1937 and was demonstrated there by Flugkapitän Siegfried Polte. KEY COLLECTION

A Do 17 E of III./KG 255 probably landing at its home base of Memmingen in the autumn of 1938. VIA CHRIS GOSS



The Do 17E and Do 17F-1 versions were built at Allmansweiler, Löwental and Manzell. Both were essentially the same, the latter having neither a bomb sight nor internal bomb racks. Instead, the F-1 had additional fuel tanks and two vertical cameras in the bomb bay. Armament-wise, both types were equipped with the rear-firing MG15 in the gondola and later a second MG15 was fitted to fire downwards. The bomb load was 1,100lb (500kg) which could increase to 1,650lb (750kg) on shorter-range missions.

Another success was Dornier's decision to break the airframe down into major components, which allowed the use of sub-contractors and

eased component replacement. In addition to its factories at Löwental and Oberpfaffenhofen, sub-contractors were Siebel-Flugzeugwerke at Halle,

Henschel-Flugzeugwerke at Berlin-Schönefeld and Abteilung Flugzeugbau der Schiffswerft Blohm und Voss at Hamburg-Wenzendorf. This procedure was

soon adopted by other aircraft manufacturers and proved instrumental in allowing the Do 17 to be delivered quickly by early 1937.

Following the type's deployment to the Spanish Civil War in March 1937, there would be changes. The decision that the DB600-series engine would be for fighters only forced Dornier to consider the Bramo Fafnir 323A-1 air-cooled radial, as employed on the MV2 and MV3 prototypes. The conversion from liquid-cooled to air-cooled engines was easy, and in 1938 the Do 17E and F started to be replaced by the Do 17M (bomber) and P (reconnaissance) variants, but in the search for increased range the Do 17P was later powered by the BMW 132N radial. The armament was increased by

SPECIFICATIONS: Do 17Z-5

POWERPLANTS

Two Bramo Fafnir 323P air-cooled radials, 1,010hp each

DIMENSIONS

Length: 15.8m (51.83ft)
Span: 18m (59.05ft)
Height: 4.7m (15.42ft)

WEIGHTS

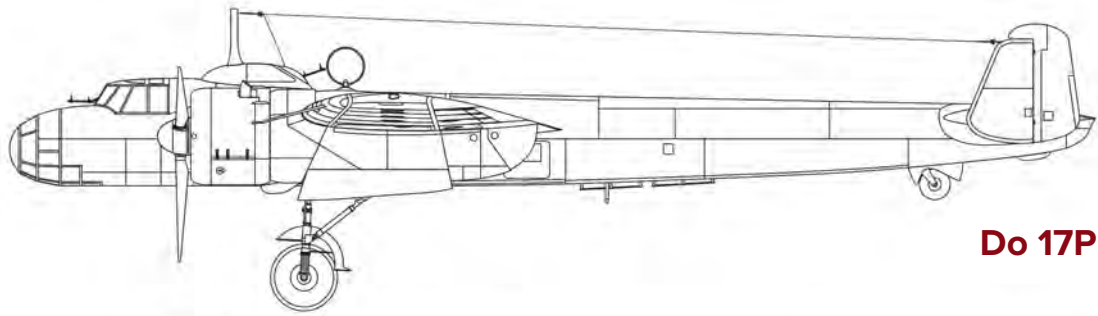
Empty: 6,320kg (13,933lb)
All-up: 8,840kg (19,488lb)

PERFORMANCE

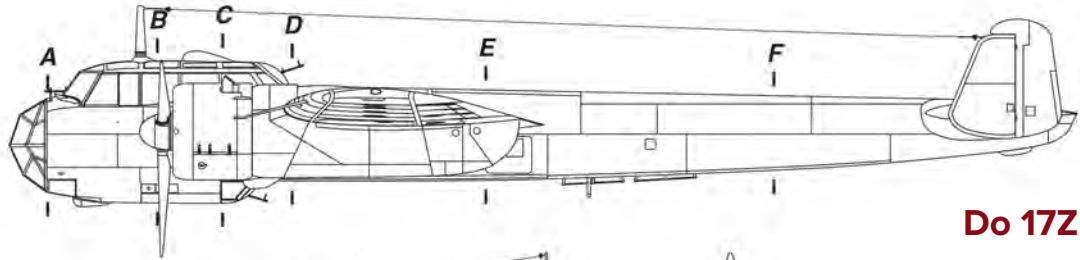
Maximum speed: 421km/h (261.6mph)
Maximum range: 2,540km (1,578 miles)
Service ceiling: 6,900m (22,638ft)

ARMAMENT

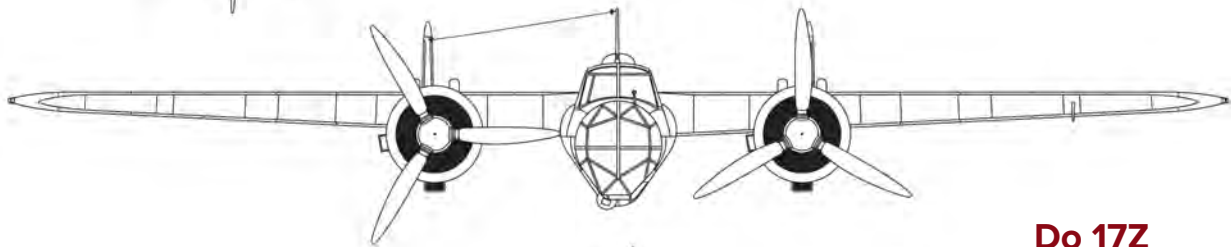
Six 7.92mm drum-fed machine guns; bomb load between 500 and 1,000kg (usually 50kg or 250kg bombs) dependant on range



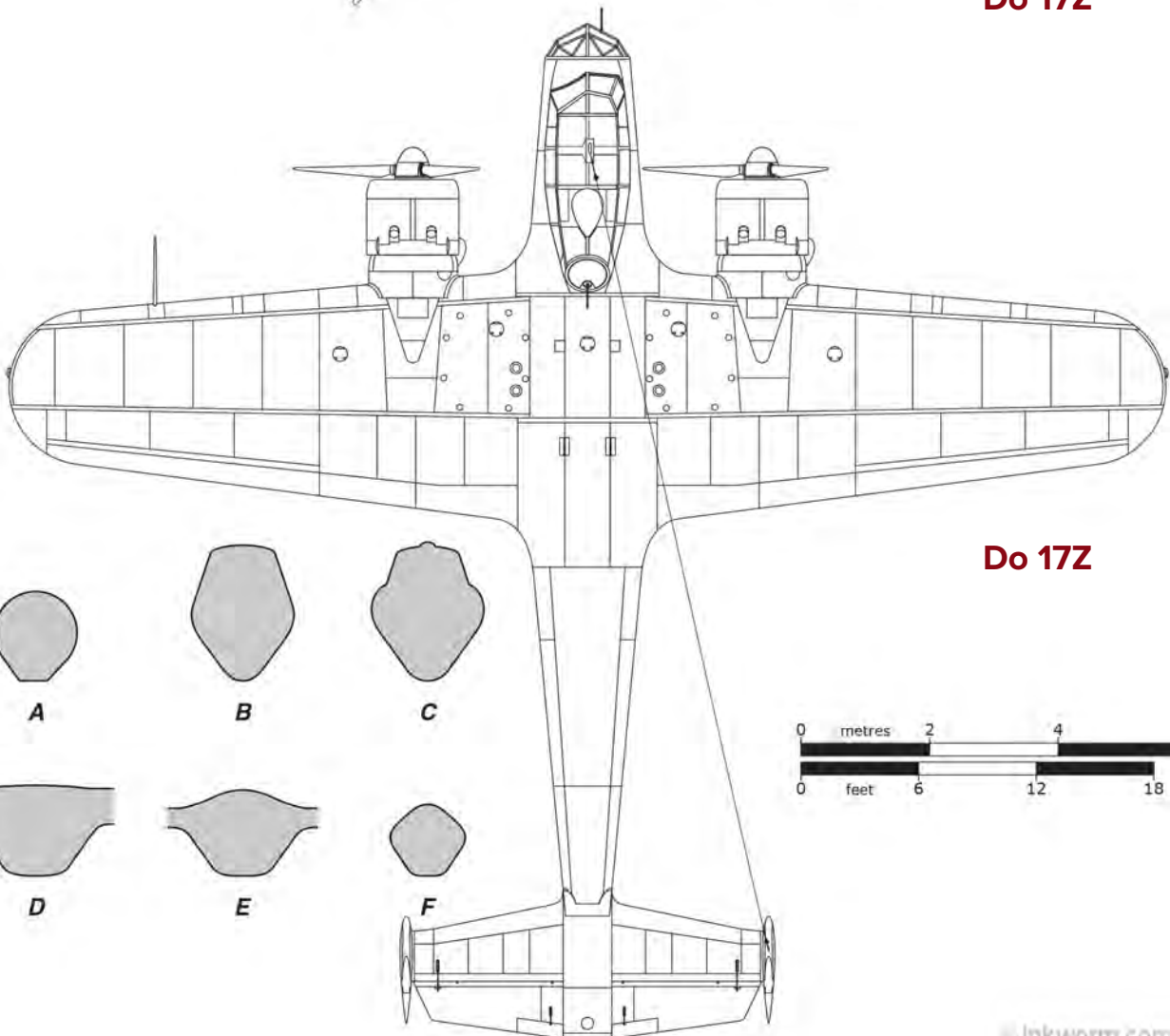
Do 17P



Do 17Z



Do 17Z



Do 17Z

www.inkworm.com



A typical production Do 17Z shows the revised forward fuselage configuration. KEY COLLECTION



A close-up of the cockpit of a Do 17 Z from 7./KG 3 illustrates the nature of the nose glazing. VIA CHRIS GOSS

means of a forward-mounted MG15, while the bomb bay in the Do 17M was stretched, increasing the payload to 2,205lb.

As war approached, Dornier began looking at the next iteration even though the M and P variants continued to be operated by reconnaissance units well into hostilities. It redesigned the forward fuselage; the cockpit roof was raised and completely glazed, as was the nose. The lower part of the cockpit area was bulged and extended back towards the leading edge, at the rear of which was an MG15 machine gun. This design was used on the Do 17S, which had liquid-cooled DB600G engines, but only three were produced. Next came the

DB600A-powered Do 17U, a five-seat pathfinder version of which 15 were built. However, with DB600s being reserved for fighters, the new airframe was

powered by Bramo Fafnir 323As. This would be the ultimate version, the Do 17Z.

The Do 17Z-1 was essentially the same as the M-1, apart from

the forward fuselage. Despite the relatively un-aerodynamic forward fuselage, performance remained unchanged.

However, when a fourth crew member, increased defensive armament and a 2,205lb bomb load were added, the Z-1 was underpowered. The answer was to halve the bomb load or re-engine. The Z-2 was therefore fitted with the Bramo Fafnir 323P, but it still meant that with a full bomb load its operational radius was just over 200 miles. The Z-3 had a reduced bomb load and installation of automatic cameras, while the latter two variants were the Z-4 dual control trainer and the Z-5 which was fitted with additional flotation aids and life-saving equipment for maritime operations.

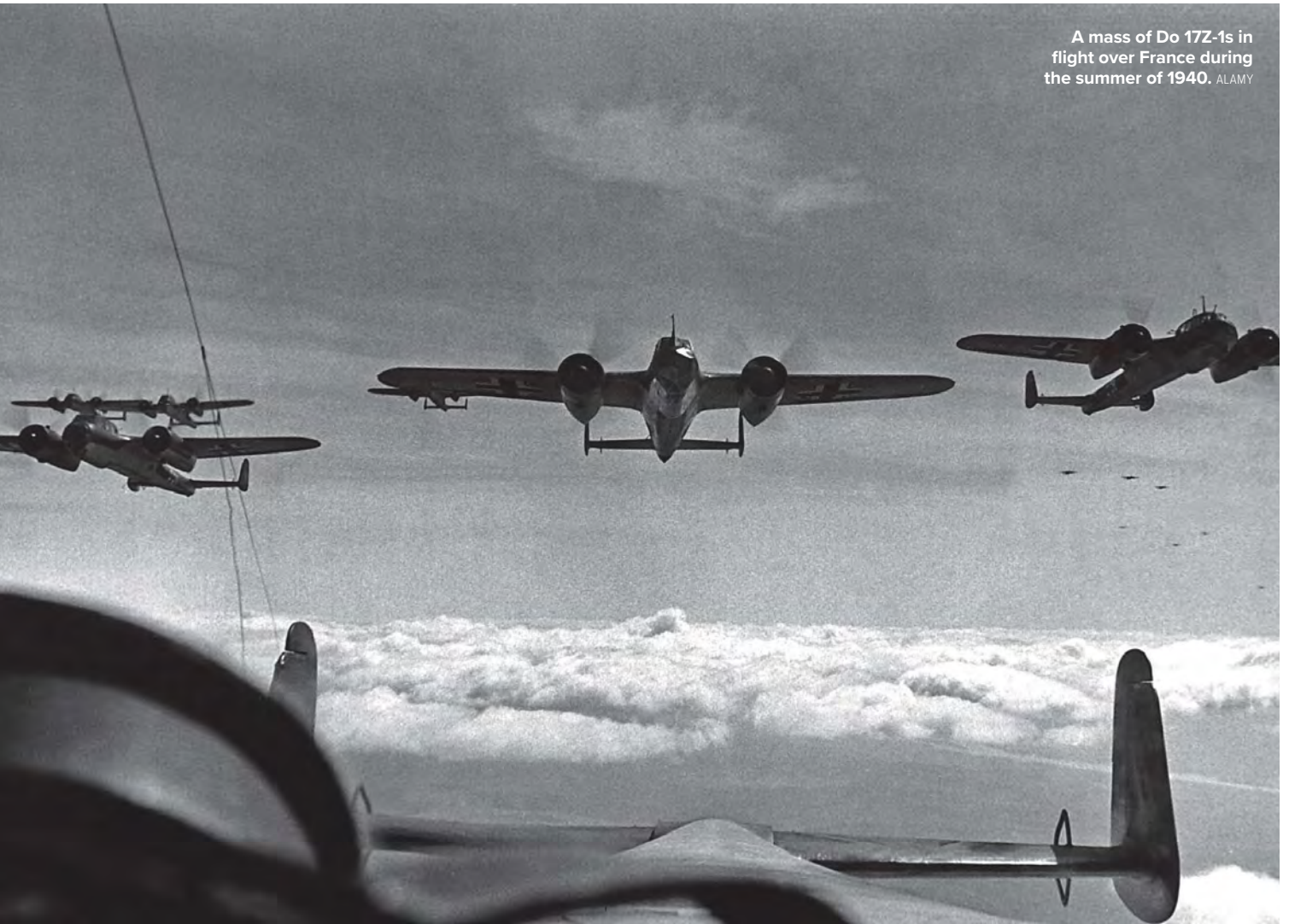


The crowded cockpit with the pilot centre, the observer on the right and presumably the flight engineer at left. VIA CHRIS GOSS

Do 17 MAIN COMBAT VARIANTS

Do 17E-1 (bomber)	BMW VI 7.3d engines	Two 7.92mm machine guns, up to 750kg bomb load
Do 17E-2 (bomber)	BMW VI 7.3d engines	As E-2; minor electrical modifications
Do 17F-1 (recce)	BMW VI 7.3d engines	Two 7.92mm machine guns, two cameras in bomb bay, additional fuel tanks
Do 17F-2 (recce)	BMW 132N engines	29 built by Blohm und Voss; otherwise as F-1
Do 17M-1 (bomber)	Bramo Fafnir 323 A-1 engines	Three 7.92mm machine guns, up to 1,000kg bomb load
Do 17P-1 (recce)	BMW 132N engines	Three 7.92mm machine guns, two cameras and photo-flash bombs
Do 17P-2 (recce)	BMW 132N engines	As P-1 but up to 200kg bomb load
Do 17S (recce)	Daimler-Benz DB601G engines	Three built
Do 17U (pathfinder)	Daimler-Benz DB601G engines	14 built
Do 17Z-1	Bramo Fafnir 323A-1 engines	Four 7.92mm machine guns, up to 500kg bomb load
Do 17Z-2	Bramo Fafnir 323P engines	As Z-1, up to six 7.92mm machine guns, up to 1,000kg bomb load
Do 17Z-3	Bramo Fafnir 323P engines	As Z-2 but reduced bomb load and additional automatic cameras
Do 17Z-4	Bramo Fafnir 323P engines	Dual-control trainer
Do 17Z-5	Bramo Fafnir 323P engines	As Z-3 but additional flotation aids on nose and internal life-saving equipment
Do 17Z-7 (night fighter)	Bramo Fafnir 323P engines	Offensive armament of three 7.92mm machine guns and one 20mm cannon; known as Kauz I
Do 17Z-10 (night fighter)	Bramo Fafnir 323P engines	As Z-7; four 7.92mm machine guns, two 20mm cannon, infra-red spotlight, six boxes of 15 1kg incendiaries to be manually dropped; known as Kauz II

A mass of Do 17Z-1s in flight over France during the summer of 1940. ALAMY



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Early days and Spain

The first units to convert to the Do 17E-1 were I./Kampfgeschwader 153 (I./KG 153) and I./KG 155. Soon afterwards, Aufklärungsgruppe (Fern)122 ((F)/122) began transitioning to the Do 17F-1. The remainder of KG 153 and KG 155 went through the process throughout 1937, with KG 255 forming later.

In March 1937, the first of three Do 17Es arrived in Spain to be part of Versuchsbomben-Gruppe 88 (VB/88), flying a mix of aircraft types for operational testing alongside nationalist forces during the Spanish Civil War. It is thought that the Do 17 conducted its inaugural mission on 12 March, but suffered its first loss on 18 April when an E-2 was shot down by Polikarpov I-15 fighters of the Spanish republican side. The

pilot was killed but the two other crew members bailed out successfully.

It soon became obvious that other aircraft could carry a bigger bomb load, leaving the Do 17 for reconnaissance duties, so during August 1937

“It was obvious that other aircraft could carry a bigger bomb load, leaving the Do 17 for reconnaissance”

elements of (F)/122 were sent to Spain to be part of reconnaissance squadron Aufklärungsstaffel 88, or A/88. The Do 17F-1 now began replacing the Heinkel He 70 as well as starting to re-equip all long-range and some short-range reconnaissance units



Two KG 155 Do 17Es, coded 53+A25 and 53+C25, on climb-out during 1937. KEY COLLECTION



ABOVE: This Do 17P-1, coded 27-28, served as part of the Legion Condor in Spain with Aufklärungsstaffel 88. CHRIS SANDHAM-BAILEY

back in Germany. In August 1938, the Legion Condor Do 17E and Fs, known affectionately as 'Bacalao' (Spanish for cod), were transferred to the Spanish, but as the conflict there escalated more modern fighter aircraft such as the Polikarpov I-16 proved capable of intercepting the Do 17E-1 and F-1. This resulted in the Do 17M and P.

The two improved variants began to replace the older ones during 1938. In Spain that December, A/88 received five new Do 17s; by the following summer, in the region of 480 of all variants were in service. A/88 flew its last reconnaissance missions of the war sometime around 19 March 1939, and when the campaign ended four Do 17Ps were on hand to take part in the victory flypast. Around 32 Do 17s, of which all but five were E and F variants, served in Spain. Six were lost on operations and another seven had accidents.

Blitzkrieg

The attack on Poland on 1 September 1939 now saw the largest concentration of Do 17s. Around 20 Staffeln of Do 17Ps were used for reconnaissance and KG 2, KG 3, KG 76 and KG 77 for bomber operations, all with Do 17E, M and Z aircraft. In addition, nine Gruppen of Ju 87 Stukas flew small numbers of Do 17M/Ps for support and reconnaissance work. In the region of 370 Do 17 bombers and 262 Do 17 reconnaissance aircraft were available.

The first operational Do 17 mission of the war was flown by III./KG 3 against approaches to the railway bridge at Dirschau. At least four reconnaissance Do 17Ps were lost on the first day, with around four more

damaged. On the bomber side, all but KG 76 suffered combat losses. The unit affected worst was KG 77 with six aircraft lost and another 15 sustaining varying degrees of damage. All were listed as being E-1 versions, the Geschwader starting to convert to the Do 17Z in the middle of September 1939.

Twelve of its aircrew had been killed, three captured and 10 wounded or injured.

“The Do 17 was sidelined in favour of the He 111’s bomb load and the Ju 88’s speed and range”

Losses in Poland were light due to German air superiority, the campaign

lasting barely two weeks. This is best illustrated by KG 2, which supplied just I and II./KG 2 flying a mixture of Do 17Zs and Ms. The Geschwader reported the total loss of three Do 17Zs on 1, 3 and 15 September, a sole Do 17M on 10 September and,

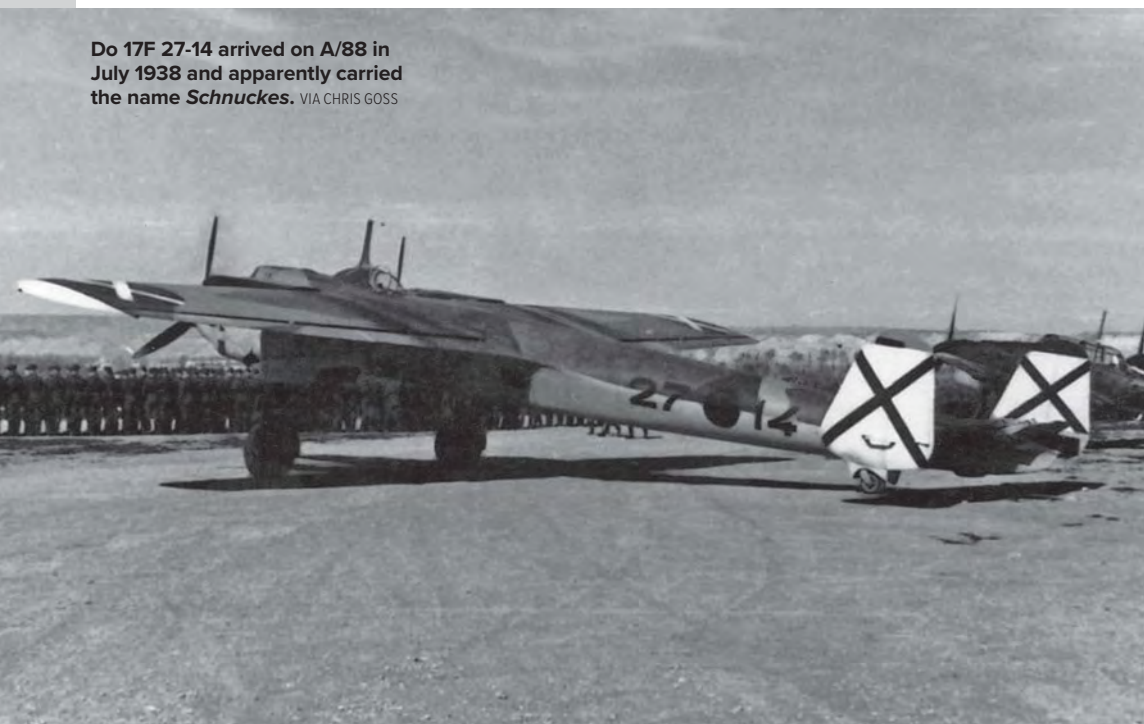
unusually, a single Do 17U-1 on 12 September. Nine aircrew were killed, four taken prisoner and 12 wounded. All the casualties or losses were attributed to flak or ground fire.

The Do 17’s Achilles heel remained its small bomb load and limited range. It was increasingly sidelined in favour of the He 111’s bigger bomb load and the Ju 88’s speed and range, the latter aircraft appearing in combat from October 1939 onwards. As a result, even by the end of 1939, Do 17 production was slowing down. The end finally came in October 1940 after which some 500 Do 17Z-1 and Z-2 and 22 Z-3 aircraft had been built. The total of all types produced is stated as 2,139.

On the western front, Do 17s were active on reconnaissance sorties over France, Belgium and the Netherlands. The first Do 17P lost was from 3.(F)/122, shot down by friendly fire on 24 September 1939 with the deaths of two of the crew. The initial operational loss was a Do 17P which suffered engine failure over the North Sea on 26 October and force-landed in the Netherlands where the crew were interned. The maiden combat shoot-down of a Do 17P occurred on 30 October when Plt Off Peter ‘Boy’ Mould of the Hurricane-equipped No 1 Squadron claimed an aircraft of 2.(F)/123, which crashed with the death of its crew. November would see the first Do 17 being lost to a French fighter when, on the 7th, a Curtiss Hawk 75 pilot from Groupe de Chasse II/5 shot down a Do 17P of 3.(F)/22.

By April 1940, the invasion of France and the Low Countries was just 40 days away, and air operations began to increase with an improvement in the weather. Four Do 17s were shot down in combat and another four damaged during the month,

Do 17F 27-14 arrived on A/88 in July 1938 and apparently carried the name *Schnuckes*. VIA CHRIS GOSS





A Kette of Do 17Zs from 7./KG 3 in September 1939, each wearing the unit's ace of clubs badge and sporting personal names. VIA CHRIS GOSS

though a number of units had begun converting to the Ju 88.

German forces invaded Norway on 8 April, but the role played by Do 17s was minimal due to the type's poor range. 1.(F)/120, the only Do 17 unit to take an active part, had

just five Do 17Ps and three He 111s, and shortly after the campaign it began to hand over its Do 17s in favour of the He 111. Küstenfliegergruppe 606 carried out coastal armed reconnaissance in the seas between Germany and Norway,

one Do 17Z-3 failing to return from a mission on 9 April. Because of its maritime nature, Küstenfliegergruppe 606 later operated the Do 17Z-5, a Z-3 that was equipped with additional flotation and survival equipment.

Battle of France

The assault on France began on 10 May 1940 and KG 2, KG 3, KG 76 and KG 77 were in action from the start. KG 2 committed all three Gruppen on the first day, losing five aircraft with six damaged. It was worse for KG 3: 14 Do 17s downed and three more damaged. KG 76 saw three aircraft lost and two damaged, while KG 77 suffered the least with one shot down and three damaged. The loss of 23 Do 17s on the inaugural day of the campaign was bad.

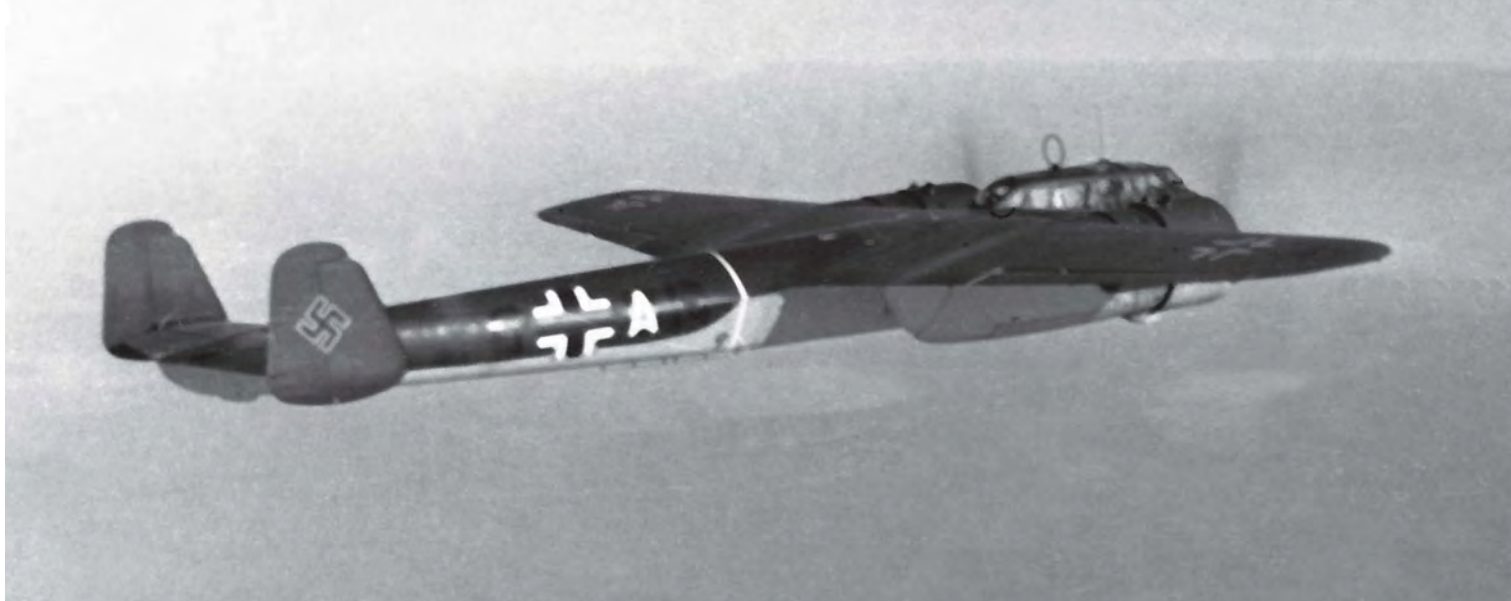
The second day would not be as dramatic. Reconnaissance Do 17 losses numbered one from 3.(F)/31 returning damaged by a Hurricane of No 1 Squadron; 2.(F)/123 then suffered one aircraft damaged in combat with French fighters. A second loss from this unit was attributed to No 85 Squadron, force-landing with two wounded crew. On the bomber side, things were quieter, though KG 2 still saw 11 of its aircraft damaged and two destroyed.

A similar pattern occurred on 12 May. A Do 17 of 3.(F)/11 was shot down by flak, its crew being killed, while another from 1.(H)/121 probably fell victim to GC II/5 and crashed, killing two crew. The remaining loss again came from 2.(F)/123, an aircraft from which crash-landed. On the bomber side, all the KG 2 casualties came from III Gruppe later in the day. They had been briefed to carry out low-level attacks against troops, which resulted in six aircraft damaged and one written off. KG 3's losses were higher: five destroyed and three damaged.

As German forces advanced, the tempo of operations began to lessen. Reconnaissance and bomber units would generally see high losses one day, then hardly any the next. The scene of battle was starting to switch to the Channel coast, and in particular Dunkirk. Do 17 losses decreased, but the worst day for the aircraft in the remaining days of May came on the 27th. In addition to three aircraft lost by KG 2 and four damaged, KG 3 lost 12 aircraft over Dunkirk with another five damaged.

When Fall Rot, the second phase of the offensive, was declared on 5 June, casualties fell yet further. The most senior Do 17 loss of the whole campaign occurred on 15 June when the Kommodore of

F1+AM was the aircraft of the 4./KG 76 Staffelkapitän, Hptm Helmuth Raven. He would survive the war, being awarded the Deutsches Kreuz in Gold on 24 September 1942 while with II./KG 51. VIA CHRIS GOSS



KG 77, Generalmajor Wolf von Stutterheim, was shot down by French fighters, his aeroplane crash-landing. Badly wounded, von Stutterheim was flown to Berlin but died of his wounds on 3 December.

Over Britain

The Do 17 first made an appearance en masse in British airspace on 3 July 1940. By now, the only pure Do 17 bomber units were KG 2 and KG 3. II./KG 76 was converting to the Ju 88, as would KG 77. It was therefore a bitter pill for KG 77 that, on 3 July, 1, 2, 8 and 9./KG 77 each lost an aircraft. In addition, a Stab/KG 2 Do 17Z was badly damaged in combat and an aircraft from 3./KG 3 went down into the Channel. All were as a result of fighter action, and only one came down on land. There would now be a series of convoy attacks in the days leading up to 10 July.

Regular reconnaissance flights were still being flown, but like KG 77, many of the Do 17P units were converting to the Ju 88. For

example, the only pure Do 17 units in Luftflotte 3 appear to have been 2.(F)/123 and 3.(F)/31.

On 10 July, the Battle of Britain began. A Do 17P-1 from 4.(F)/121 was tasked to carry out a reconnaissance sortie over Oxford, Portsmouth, the Isle of Wight and Swindon but was badly damaged by No 145 Squadron

Hurricanes, returning with two crew wounded, one of them fatally. It is believed that this aircraft was the first casualty of the Battle of Britain. This was followed by a Do 17Z of 4./KG 3, shot down off the Norfolk coast by No 66 Squadron Spitfires. That afternoon, 26 Do 17s of I./KG 2 and 26 from III./KG 2 attacked a convoy south of Dover, claiming to have sunk three freighters totalling 21,000 tons and damaging another three totalling 19,000 tons; in fact, just one, of 466 tons, was sunk. The RAF

reported three Do 17s destroyed and four damaged. In addition to the loss of one Do 17, two more crash-landed back in France with dead or wounded crew.

Because of the weather on 11 July, Do 17 operations appear to have been limited to coastal reconnaissance, but a 4./KG 2 aircraft returned with 220 bullet holes, having shot down the No

85 Squadron Hurricane responsible. There would be two more losses on that date: a Do 17P-1 of 2.(F)/11 was shot down by No

601 Squadron and an aircraft of weather reconnaissance unit Wettererkundungsstaffel (Wekusta) 26 was reported missing.

For the remainder of July, Do 17 bombers carried out armed reconnaissances and the occasional convoy attack, and casualties were few. There were a few losses from other units, these occurring from locations

as far north as Aberdeen and as far west as Dorset.

A series of attacks on 12 August saw Do 17s initially carrying out nuisance and decoy flights over south-eastern England. I./KG 2 attacked Lympne and then Manston. Early that evening, all of KG 2 struck airfields near Canterbury (presumably Bekesbourne) and Dover (probably Hawkinge and Lympne). RAF records confirm that both Hawkinge and Lympne were hit. Three attackers returned damaged with wounded crew. The parts played by KG 3 and KG 76 cannot be determined as no records exist and there were no losses.

13 August was meant to be Adlertag and should have seen multiple attacks against airfields. However, due to bad weather, many did not materialise or, as with KG 2, attempts were made to recall them. In a strike on Eastchurch by KG 2, I Gruppe heard the order and turned back but the remaining aircraft flew on. They claimed they hit six hangars, numerous buildings, a flak position and fuel tank and destroyed 10 Spitfires. In truth, a number of hangars were hit, five Blenheims were destroyed and a single Spitfire damaged. The RAF said it shot down 16 Do 17s, probably shot down another four and damaged eight. Five were actually shot down and another seven returned with varying degrees of damage.

Do 17 losses on Adlertag were limited to KG 2 but, two days later, all three Do 17 bomber Geschwadern were in action. The first loss was from 3.(F)/31, shot down by No 602 Squadron Spitfires off the Isle of Wight. Mid-afternoon, all three Gruppen of KG 2, together with I and III./KG 3, took off to bomb airfields near the Thames Estuary. Rochester was reported as being attacked in two waves. KG 2 returned unscathed but KG 3 sustained a number of casualties. The majority were from 6./KG 3 which lost two aircraft and had another four damaged.

The final attack of the day was by I and III./KG 76 on its first major effort of the Battle of Britain. The targets were stated as being Redhill and Biggin Hill airfields. The crews reported

“The crews reported great confusion above their targets and that their escort was ineffective”



A pair of Do 17s over the West Ham area of east London on 7 September 1940. KEY COLLECTION



Do 17Z Werknummer 2555, coded F1+FS, of 8./KG 76 was shot down while attacking London at 12.10hrs on 15 September 1940 by Fg Off John Dundas and Plt Off Eugene Tobin of No 609 Squadron in their Spitfires. Pilot Fw Rolf Heitsch, co-pilot Fw Hans Pfeiffer and flight engineer Fw Martin Sauter were all captured but Fw Stephan Schmid was mortally wounded. VIA CHRIS GOSS

great confusion above the targets and that their escort was ineffective, which allowed RAF fighters to fly through them.

Similarly, the first attack by KG 76 on 16 August was cancelled; then an aircraft of Stab III./KG 76 was lost carrying out a high-level attack on West Malling when it collided with a Hurricane of No 111 Squadron. All four Germans and the RAF pilot were killed. At the same time, in the region of 25 aircraft from KG 3 were heading up the Thames Estuary for Tilbury docks but released their bombs before the target on Northfleet.

The next major day of operations was 18 August, which saw KG 76 carrying out a spectacular attack on Kenley. The intention was that Ju 88s from II./KG 76 would strike first; nine Do 17s of 9./KG 76 would perform a low-level raid and the remaining aircraft from I and III./KG 76 would form a final wave. Due to a delay in forming

up over France, 9./KG 76 attacked five minutes before II./KG 76 arrived overhead. British defences were ready and cloud cover hampered the higher-level attackers. 9 Staffel came in over the airfield in line-abreast as low as possible. Ground defences, which included firing steel cables that were then held aloft by a parachute, were quickly in action. Three hangars and numerous other buildings were destroyed, telephone lines cut, and a number of Hurricanes and a Blenheim destroyed. Nine airmen were killed and seven wounded.

KG 76 paid a heavy price. I Gruppe lost one aircraft with another two damaged, but it was III Gruppe that came off worst. An aircraft of 8 Staffel came down in the Channel with

three crew killed, while two of 9 Staffel's Do 17s — including that of the Staffelkapitän — crashed on British soil and another two in the Channel. From 9 Staffel seven were killed, four captured and eight wounded. This was a larger number than normal since extra personnel had been

“On 18 August, British defences were ready and cloud cover hampered the higher-level attackers”

taken along for operational experience. There was one notable casualty: Oblt Hermann Magin was mortally wounded and his observer, Ofw Wilhelm-Friedrich Illg, took control so they could bail out. Illg found he could not turn the aircraft as Magin's legs were jammed against the rudder pedals. The rest of the crew managed to lift Magin's body out, whereupon Illg took control and turned south. They crossed the Channel

without incident but took four attempts to land. Magin died before he could get to hospital. Illg, who had never flown a Do 17, was recommended for the Ritterkreuz and promotion to officer.

Küstenfliegergruppe 606 had now moved to Brest, where it would carry out armed maritime reconnaissance and precision night attacks against land targets. For example, at dusk on 20 August, seven aircraft from I./606 bombed airfields in Cornwall. From now on night attacks began to feature more and major daylight raids on the UK mainland by Do 17s would end in 26 days. Before then, 66 Do 17s would be destroyed on operations.

Yet more poor weather on 21 August allowed KG 2 and KG 3 to carry out a series of Störangriffe (nuisance attacks). The trouble was that six Do 17s would be lost, with 10 aircrew killed and 14 taken prisoner. ➤

The focus turned back to RAF airfields with an improvement in conditions on 26 August. Just before midday, a small number of aircraft from III./KG 3 made a diversionary raid against Manston with a massive fighter escort. In the battles that followed, all the losses came from 7./KG 3. One crashed into the sea, another ditched in the Channel on the return, and a final aircraft landed back in France with three wounded crew. There was just one more loss: Do 17Z-2 Werknummer 1160, coded 5K+AR, which came down on the Goodwin Sands. Fw Willi Effmert and observer Uffz Hermann Ritzel were the only two survivors. The bodies of the radio operator, Uffz Helmut Reinhardt, and gunner Gefr Heinz Huhn were later washed ashore in the Netherlands and Britain respectively. This aircraft is possibly the one recovered by the RAF Museum in 2013. About two hours later, I./KG 2 took off to attack Hornchurch and III./KG 2 Debden. I Gruppe lost two aircraft, and III Gruppe three.

It is not surprising that, for the remaining five days of August, KG 2 seems to have concentrated on night attacks with Hull, Harwich, Colchester, Derby and Thames Haven being chosen. Darkness generally provided

sufficient protection, but two aircraft from II./KG 2 and one from III Gruppe claimed to have been damaged by night fighters. Two aircraft were abandoned over France and Belgium and one crashed on its return. Küstenfliegergruppe 606 records show that its focus of effort was now on night operations with few daylight maritime missions. On the nights of 26-31 August it launched 120 Do 17s against such targets as St Eval, Bristol, Avonmouth, Liverpool/Birkenhead and Falmouth.

“Do 17s played a minor part in daylight raids for all but one of the remaining days of August”

The first Do 17 reconnaissance losses for 12 days occurred on 27 August when No 238 Squadron Hurricanes shot down a 3.(F)/31 Do 17P over Devon. Just under two hours later, Nos 56 and 501 Squadrons downed another from 3.(F)/10 off Cap Gris-Nez. There would be one more loss, namely a Do 17P of 3.(F)/22 over the North Sea on 30 August. It was the last Do 17 reconnaissance casualty until 5 December — that, from 3.(F)/31, would be the final one of 1940.

Do 17s still played a minor part in daylight raids for all

but one of the remaining days of August. I and II./KG 3 attacked Rochford on the afternoon of 28 August, losing a 6 Staffel aircraft, while a 4 Staffel machine crashed back in France. I Gruppe lost two in accidents while on operations. On 30 August, I./KG 76 bombed Biggin Hill around lunchtime and Detling later that afternoon, all without loss.

The final day of the month was another one of good weather. II./KG 2 took off around breakfast-time to attack Duxford and III

Gruppe went for Debden, the latter reporting good hits on the Essex airfield. Casualties were light. At about midday it was the turn of I and II./KG 3 to target Hornchurch. This time four aircraft were shot down. The final Do 17 raid of the day was against Hornchurch by KG 76, with 14 aircraft from I Gruppe and four from III Gruppe. One was lost and another damaged.

September 1940 started badly for KG 76, a number of aircraft being damaged during raids on Kenley, Biggin Hill and Gravesend and returning with

wounded crew. The only total loss came from 9 Staffel and resulted in Ofw Wilhelm Illg, the hero of 18 August, being shot down and captured.

Two Do 17s from III./KG 3 were destroyed on returning to the Continent during 2 September's strike on Eastchurch, while one from 9./KG 76 crash-landed on Rochford airfield. Aircraft from I./KG 76 were recorded as having attacked Hornchurch on this date. The next morning II./KG 2 bombed North Weald, losing one from 5./KG 2. The crossfire from the remaining aircraft accounted for the Hurricane responsible, the pilot of which was killed.

It appears that the Do 17 Geschwadern were taking turns in the battle for the airfields, as on 4 September I./KG 76 targeted Rochford. The day afterwards saw the tempo being raised, II./KG 2 bombing Biggin Hill in the late morning and a number of Geschwadern, including KG 2, KG 3 and I./KG 76, attacking oil tanks at Thames Haven and London docks in the evening. The only casualties were two aircraft from 6./KG 2 damaged in combat while attacking Biggin Hill.

German tactics changed from 7 September. The airfields

A heavily camouflaged Do 17Z-5 of Küstenfliegergruppe 606, probably at Brest in October-November 1940. Note the flotation bulges on the nose. VIA CHRIS GOSS



were now secondary to raids on London and other major cities. All three Do 17 Geschwadern were in action: II and III./KG 2 reported launching 52 crews in the afternoon against Victoria Docks, an aircraft from 4./KG 2 crashing in France and killing the whole crew. A Stab./KG 3 machine crashed in the Channel with the deaths of all four people on board.

Early that evening a Stab/KG 76 crew was tasked to photograph damage from the earlier mission, but was attacked by a Spitfire from No 234 Squadron, which itself was damaged. It has been stated that the RAF pilot then deliberately rammed the Do 17, and when the remains of the bomber were recovered in the 1970s pieces of Spitfire were found with them.

Three of the German crew were killed, as was the Spitfire pilot whose parachute, alas, failed to open fully.

II./KG 2 took off for London on 8 September, only to be recalled due to weather. It tried again just over an hour later, this time with III Gruppe. As it approached London, a 5./KG 2 example took a direct flak hit and blew up, the explosion taking out the other

two aircraft in the Kette. All three fell to earth near Maidstone. Seven crew were killed, the remainder captured.

With the return of bad weather, the only Do 17 loss for the next six days was one from 9./KG 76 on 10 September. Investigation of the wreckage of this aircraft revealed at least 1,000 bullet holes, many of which had been patched



The menacing visage of a Do 17Z-7 Kauz I, on the strength of NJG 2 at Gilze-Rijen in the Netherlands during 1940. KEY COLLECTION

DATAFILE

NIGHT FIGHTERS

In June 1940, Maj Wolfgang Falck was tasked to form a night fighter unit, designated Nachtjagdgeschwader 1 (NJG 1). The preferred aircraft for the role was the Bf 110, but two versions of the Do 17 were used initially as night fighters: the Z-7 Kauz I and the Z-10 Kauz II (Kauz meaning screech owl). The nose was removed from a Do 17Z-3 and replaced by that from a Ju 88C fighter. The armament was three 7.9mm machine guns and one 20mm cannon, but this was later found unsatisfactory and a new nose was designed which increased the firepower to four machine guns and two cannon. In the tip of the nose was an infra-red spotlight called the Spanner-Anlage, later supplanted by the first-generation FuG 202 Liechtenstein radar. This machine was now designated as the Do 17Z-10.

The first recorded combat came on the early hours of 29 June 1940 when a Whitley reported damaging a night fighter near Eindhoven. Apparently a Do 17Z-7 of 1./NJG 1 later crash-landed

with two crew injured and one killed. I./NJG 2 was formed from II./NJG 1 in September 1940 and flew intruder missions over Britain. The Gruppe operated a mix of Ju 88s and Do 17Z-10s, the latter flying with 2./NJG 2.

It is difficult to attribute successes to the Kauz II as it was used in very small numbers — during the period from June to October 1940, Do 17Z-7s and Z-10s were only employed on 19 nights, flying 22 sorties. However, there are two nights where Luftwaffe records specifically mention Do 17s shooting down aircraft. The first was 10-11 February 1941 when Hptm Rolf Jung downed a No 115 Squadron Wellington. On 24 April 1941 the second and final kill went to Fw Vincenz Giessübel, who shot down a No 11 Operational Training Unit Wellington over Bassingbourn. His victim then crashed onto a second Wellington. As there were so few such aircraft, Z-10 losses were understandably light. Around 13 October 1941, intruder missions ceased by order of the Führer.

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A good view of a Do 17Z over the Channel during the Battle of Britain. VIA CHRIS GOSS

up from previous combats. It was clear that the RAF was becoming increasingly potent and this would be proven on 15 September, after which the Do 17 began to be employed in different ways.

From a Do 17 point of view, on 15 September losses for all three bomber units forced the Luftwaffe to stop using the type for massed daylight raids. Compared to the Ju 88 and He 111, it was too vulnerable, limited on range and carried too small a bomb load. Now the Do 17 would be used more by night, or by experienced crews using bad weather and low-level flight to attack specific targets alone by day. II and III./KG 2 lost seven aircraft that day, II./KG 3 six, and KG 76 six from both of its Gruppen including the famous fate of Do 17Z-2 Werknummer 2361. This I./KG 76 machine, in the hands of Oblt Robert Zehbe, was rammed by the Hurricane of No 504 Squadron's Sgt Ray Holmes

and crashed at central London's Victoria Station.

Very few Do 17s were lost on operations during the days following 15 September. More common now were instances of lone aircraft carrying out Störangriffe. For example, on 19 September a single example from Küstenfliegergruppe 606 attacked St Eval and on the 24th one from 2./KG 76 performed

“Losses for all three units forced the Luftwaffe to stop using the type for massed daylight raids”

a Störangriff against London. It used the cloud as a means of going undetected but was damaged by No 605 Squadron and force-landed near Boulogne.

Towards the end of October, the Luftwaffe tried a new tactic. Codenamed 'Opernball' and termed ZerStörangriffe, aircraft flown by experienced crews — either individually or in a Kette — made low-level attacks,

normally at dawn or dusk and in poor weather, against Bomber Command airfields. KG 2 targeted Honington, Newmarket and Mildenhall on 27 October; two days later, 8./KG 2 attacked Newmarket and 6./KG 2 Wattisham. However, such sorties did not pass off without casualties.

A return to night attacks came in the remaining two months

of 1940. Targets were now away from London and included Coventry. Fourteen Do 17s were lost in combat in November and five in December. Of these, 10 losses occurred over or off the UK, of which just three were shot down by day. Losses by night were still due to flak or accidents, the first Do 17 shot down by a night fighter being claimed on 15 January 1941. By then only KG 2,

KG 3 and Küstenfliegergruppe 606 were operating over Britain. The following month II./KG 2 began to convert to the Do 217 and Küstenfliegergruppe 606 to the Ju 88. After that, I and II./KG 3 started the transition to the Ju 88. By mid-March 1941, just I and III./KG 2 and III./KG 3 were in the west. As of April, the Do 17 bomber had disappeared from the Luftwaffe's order of battle for the Blitz.

During January 1941 only three Do 17s were lost on operations. February saw another six, including the last loss by Küstenfliegergruppe 606 on the night of the 17th, at the hands of a No 219 Squadron Beaufighter. The RAF pilot responsible stated the Do 17 was so slow that he had to fly a series of S-turns to stay behind it and was forced to overfly the stricken bomber, missing it by 10ft.

Just two bombers were lost over Britain in March before the Do 17s headed for the Balkans at the start of April or, as in the case of II./KG 2, back to Germany to convert to the Do 217. On the night of 13 March, Stab./KG 2 lost an aircraft to a Beaufighter of No 29 Squadron while attacking Hull. The second casualty came from 2./KG 3: briefed to carry out an armed weather reconnaissance in preparation for a Störangriff against Chelmsford, the pilot used the low cloud to hide the Do 17's approach, but just off the Suffolk coast it was shot down by flak. The crew bailed out but only three survived. The last recorded daylight combat of 1941 involving a Do 17 took place over the North Sea on 26 March 1941. No 605 Squadron claimed to have destroyed a Do 17 from 2./KG 2, which actually returned with minimal damage.

One more, very short, campaign saw Do 17s back over Britain. The 'Baedeker raids' involved Exeter, Bath, Norwich and York being targeted, the first being against Exeter on the night of 23-24 April 1942 and the last against the same city on 3-4 May, although some say they continued for a few months afterwards. Three Do 17s from IV./KG 2 were lost, the last on the night of 3-4 May, probably shot down by No 604 Squadron's Flt Lt Edward Crew in a Beaufighter.

Balkans, Greece and 'Barbarossa'

German forces attacked the Balkans on 6 April 1941. The only Do 17 units in theatre were 2.(F)/11, Stab, I, 6 and III./KG 2, and III./KG 3, which totalled a maximum of 105 aircraft. StG 2 also had six Do 17Ps in addition to its Stukas. Losses were light, KG 2 suffering the most. By the end of May, when the campaign had spread to Greece, KG 2 had lost 14 aircraft as a direct result of enemy action, mostly due to flak. III./KG 3 would lose three, 2.(F)/11 two on the first day of the attack, and Stab./StG 2 one in combat. Many more casualties occurred in accidents.

The crews returned to Germany for a short rest in preparation for Operation 'Barbarossa', the invasion of the Soviet Union, which began just before dawn on 22 June 1941. It involved the same units — less StG 2 which exchanged its Do 17s

On 29 June 1941, a new night reconnaissance unit lost its first aircraft when a Do 17P from 1. Nachtaufklärungsstaffel came down over Belarus with the death of its crew. The squadron was formed in June 1941 and would subsequently

life to Aufklärungsgruppe 11, which now reported that it had Do 17Ps operating with 3 and 4 Staffel, while 1.(F)/33 also had a number of Do 17Ps on strength. However, as the war in the east continued, it was left to the Nachtaufklärungsstaffeln to fly the flag for the Do 17P. The last reported operational loss for 2.(F)/11 was a Do 17Z on 27 September 1942.

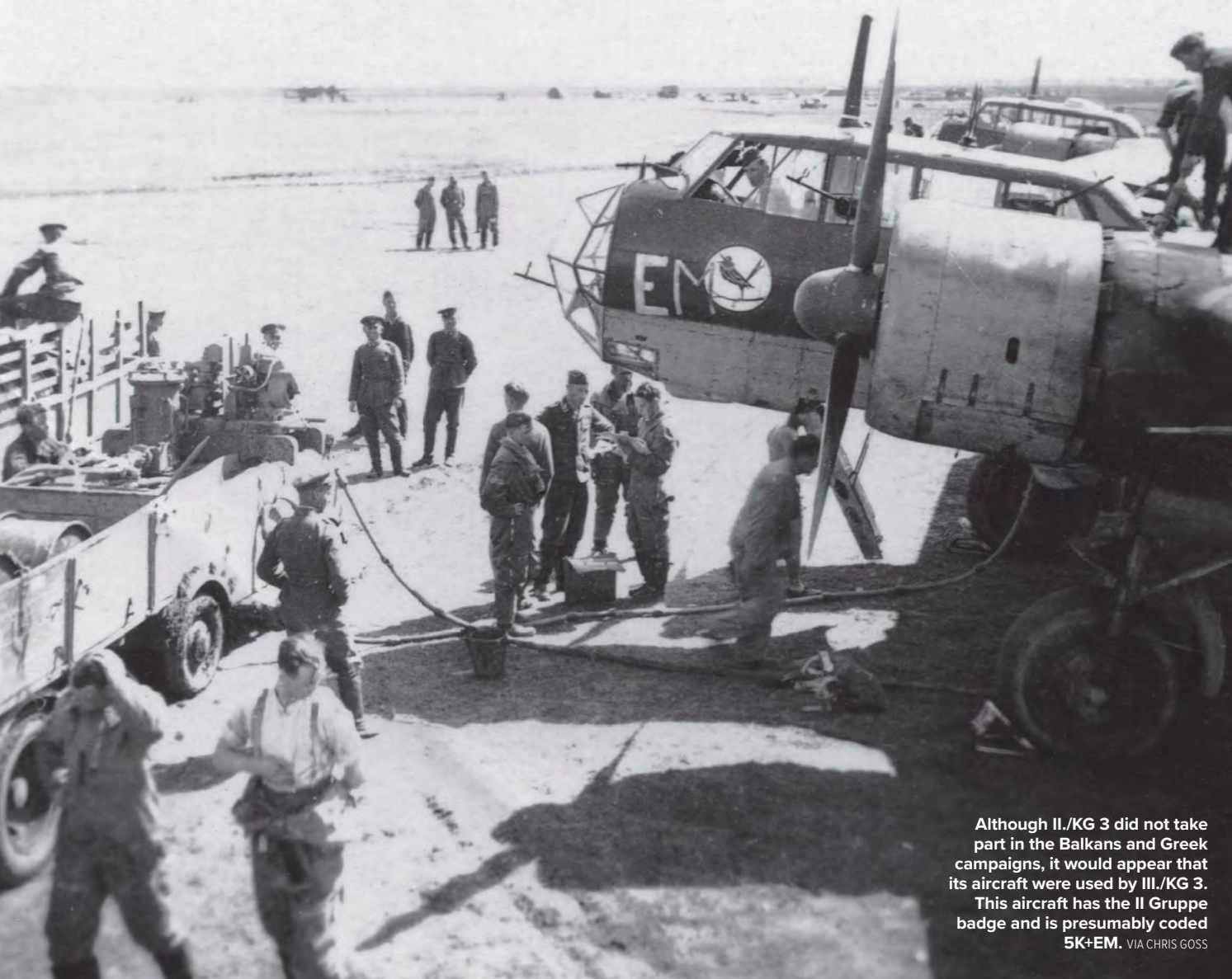
The Do 17 bomber crews' time in Russia was short. I./KG 2 returned to Germany by 1 November 1941 and III./KG 2 by 26 September 1941. Both would switch to the Do 217. III./KG 3 headed home in November 1941 to convert to the Ju 88 and its crews had gone by Christmas. ➤

“ By December 1941 the Do 17 as a front-line combat aircraft was almost extinct ”

for Bf 110s — as the assault on Yugoslavia, as well as Wekusta 1 and Wekusta 26. A maximum of 151 Do 17s were available on 21 June, but by December the Do 17 as a front-line combat aircraft was almost extinct.

be joined by 2., 3. and 4. Nachtaufklärungsstaffeln. Unfortunately, little is known about their operations.

It would appear that air superiority over the Soviet Union gave a new lease of



Although II./KG 3 did not take part in the Balkans and Greek campaigns, it would appear that its aircraft were used by III./KG 3. This aircraft has the II Gruppe badge and is presumably coded 5K+EM. VIA CHRIS GOSS

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FOREIGN USERS



Do 17Z A1+AZ of 15. (Kroat)/KG 53 at Borongaj near Zagreb in 1942. VIA CIGLIC

When Croatian volunteers were called to fight the Soviet Union, the bomber unit 5. Zrakoplovna bombaska skupina (5. ZBS) was formed. On 22 October 1941 it arrived on the Russian front, where it would operate with III./KG 3 and was designated 10.(Kroat)/KG 3. However, with III./KG 3 returning to Germany, its Do 17s were handed to the Croats and the unit became 15.(Kroat)/KG 53. It remained on the eastern front until November 1942 when the Luftwaffe decided that a sole Do 17 Staffel could do little. On 13 November the survivors started back for Croatia where they would be employed on anti-partisan missions. With losses, unserviceability and even defecting crews, their effectiveness reduced to such an extent that by July 1944 only five Do 17s were flyable. The unit was disbanded on 21 July.

In addition to Croatia, other countries operated the Do 17, albeit in very small numbers. Having been impressed by the Do 17MV1 in Zürich, Yugoslavia ordered 20 aircraft as well as seeking permission to manufacture the type under licence. Yugoslavia wanted the Do 17, designated the Do 17K, to be powered by Gnome-Rhône 14

N1/2 engines. It supplied the powerplants to Dornier, which delivered a mix of 20 bomber and reconnaissance variants in October 1937. Construction of the Do 17K took place at Kraljevo and deliveries started in early 1940. By the time of the German attack on the Balkans, there were in the region of 60 Do 17Ks, which instantly became a target. Twenty-six were destroyed in the initial assault and most of the survivors were

“ In November 1942 the Luftwaffe decided that a sole Do 17 Staffel could do little on the eastern front ”

quickly shot down, badly damaged or captured. The final tally was estimated as four lost in combat, 45 destroyed on the ground, seven that fled to Greece, two to the Soviet Union and one that defected with its crew. Of those that went to Greece, two ended up with the RAF in Egypt, while those left in

Yugoslavia were handed over to Croatia. The Bulgarian Air Force operated 11 Do 17M-1s and P-1s and was given 15 captured Yugoslav Do 17Ks. It later received another six Do 17s, while the Royal Romanian Air Force took on 10 Do 17Ms. The only other nation to use the Do 17 was Finland which, in January 1942, was given 15 Do 17Zs comprising four Z-1s, two Z-2s and nine Z-3s. They began operations in April 1942. By July 1944 just seven were left, the last survivor being scrapped in 1952.

The final years

Apart from 15. (Kroat)/KG 53 and those aircraft which were still attacking objectives in Britain during April and May 1942, from mid-1942 the major operational users of the Do 17 were 2.(F)/22 and the Nachtaufklärungsstaffeln. 2.(F)/11 reported its last accident with the type on 1 October 1942, after which it converted to the Ju 88. By then the Nachtaufklärungsstaffeln were handing over their Do 17s for other types. The last reported mention was an accident to a Do 17M from 2. Nachtaufklärungsstaffel, which took place on 20 April 1943.

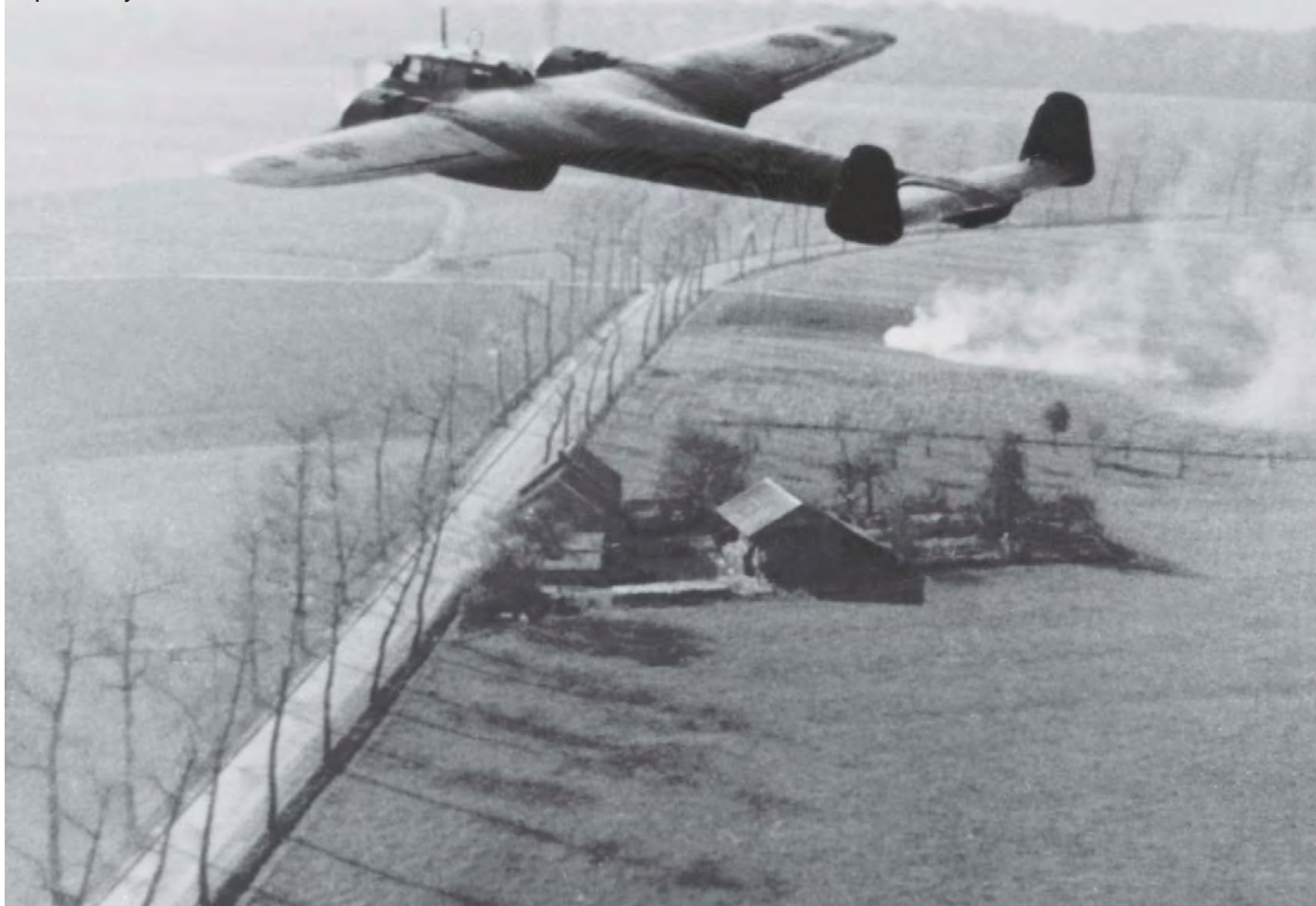
The final recorded Do 17 loss in combat is thought to have occurred on 10 October 1944, when a Do 17Z of the Nahaufklärungsstaffel Kroatien was shot down over Croatia by a Beaufighter of No 39 Squadron. Little is known about this unit, but it is thought to have been formed in April 1943, after which it operated from a number of bases in the region.

In terms of second-line duties, many Luftwaffe training and communications units flew the Do 17, but the major user during the latter stages of the war was Luftlandegeschwader 1 (LLG 1) in the glider tug and resupply roles. In December 1944, 2./LLG 1 was re-formed at Altenstadt, not far from Frankfurt, as the Schlepstaffel zbV Reich with around 18 Do 17s and 18 DFS 230 troop-carrying gliders. The zbV acronym stood for *zur besonderen Verwendung*, meaning ‘for special purposes’. The following February, having spent time at Pápa, Hungary and Alt-Lönnewitz, Brandenburg, this unit was redesignated as 4./Schleppgruppe 1. It remained at the latter base until April 1945 when it transferred to Hohenmauth/Königgrätz in what had been Czechoslovakia. Records show that Schlepgruppen 1 and 3 still reported small numbers of Do 17s on strength as late as February 1945. With records in 1945 being scant, the last recorded loss was a Do 17E from Schlepstaffel zbV Reich which suffered an accident on 4 February.

A newly produced, Gnome-Rhône 14 N1/2-powered Do 17K of the Yugoslav air arm. KEY COLLECTION



In the low-level regime, the Do 17 was considered particularly effective. RAFM



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The distinctive Do 17, known as the 'Flying Pencil' because of its slender appearance, was ahead of its time in several respects. It was fast and agile, especially at low level, but when confronted with modern fighters it proved vulnerable and needed more defensive armament. Furthermore, its limited bomb load and range meant it began being replaced soon after the outbreak of war. Nevertheless, it was popular with those who flew it.

An intelligence report dated 1 November 1940 contains views expressed by captured crews from Küstenfliegergruppe 606. They considered the Do 17Z to be excellent for armed reconnaissance and good in shallow dive attacks. However, they also stated that the aircraft was unsuitable for blind flying and was hard to manoeuvre at slow speeds. The Kommandeur,

Maj Joachim Hahn, was a great believer in very low-level formation attacks and for this the Do 17Z was ideal. The suggestion that his Gruppe be equipped with the He 111 was firmly rejected by Hahn as he felt the Do 17Z was far better for coastal missions, which gave his Gruppe a short-lived niche capability.

Very few personal accounts exist as what it was like to fly the Do 17, especially as it was all but obsolete as a front-line aircraft by 1941. However, LtJ Josef Steudel, who would fly both the Do 17 and its successor Do 217 with KG 2, wrote of the Do 17, "It was well-suited to provide support for ground troops. It was not suited for the sort of strategic bombing war our opponents conducted. It could not carry a big enough bomb load and was not sufficiently armed especially for daylight missions". Of the sorties flown in

the Balkans campaign, he went on to say, "We practised flying Ketten formation at low altitude. The Hungarian steppe was ideal terrain for such manoeuvres. Low-altitude flying over this

flat land was a special pleasure and the Do 17 was well-suited because it was very sensitive to the movement of the rudders. Over the Balkans, the Do 17 was the ideal aircraft." **A**

A very rare wartime colour image of a Do 17Z. RAFM

