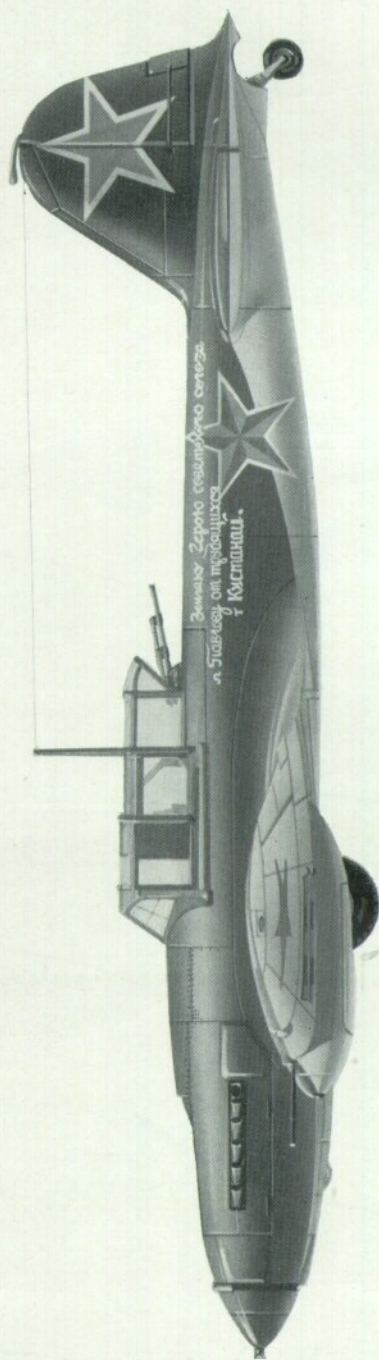


PROFILE
PUBLICATIONS

The
Ilyushin
Il-2

NUMBER 88
TWO SHILLINGS



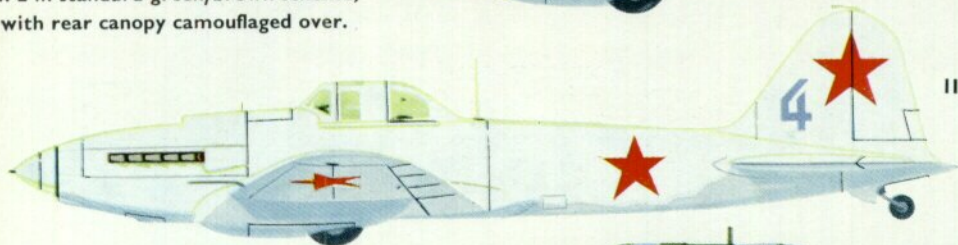
Il-2 of front-line V-VS unit, 1942, in non-standard light/dark green scheme, with unit marking flash on fin.



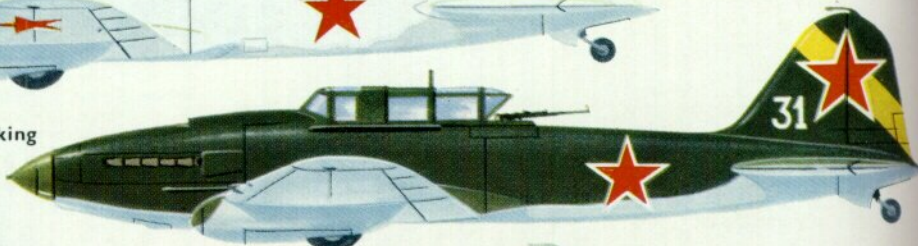
Il-2 in standard green/brown scheme, with rear canopy camouflaged over.



Il-2 in winter scheme.



Il-2m3 Mod. with unit marking flash on fin and rudder.



МСТИТЕЛЬ.

"Avenger".

Il-2m3 with unit markings on fin and rudder; personal marking on fuselage reads "Avenger".



Il-2m3 with command stripe round fuselage and Order of Red Banner on nose.



Il-2 in standard dark green finish; legend on fuselage reads "Fighting for the Fatherland".



Александр Суворов

"Alexander Suvorov".

Il-2m3 flown by Major D. Lamantsev, Knight of the Order of Suvorov 3rd Class, on the Belgorod Front. Order of Suvorov on fin.



The Ilyushin Il-2



by Witold Liss

A flight of Il-2s silhouetted against the dawn. Although immediately successful, the design did not really come into its own until the appearance of the Il-2m3 two-seater.
(Photo: Imperial War Museum)

It is an established fact of aviation history that all major classes of military aircraft employed by the combatant powers of W.W.II had their roots in the experience gained during W.W.I. By the end of hostilities in 1919, the needs of the air forces had crystallised into recognised patterns that were to hold good, in the most part, for more than twenty-five years thereafter. It does not often happen that after the state of the art has developed along established lines for many years, an entirely new requirement is formulated; new, not from the point of view of quality, but in its fundamentals. The principal example of this phenomenon to appear during W.W.II was the requirement for a specialised ground-attack aircraft, fast and agile at low level; heavily armed with a variety of weapons which would make it the scourge of infantry, artillery, armour, installations and shipping alike; capable of operating in close support of the ground forces from front-line positions; capable of absorbing the savage ground fire which is the constant lot of the low-level strike machine; and capable, to some extent, of defending itself against enemy interceptors with a reasonable chance of success. The Germans attempted to fill this need with the Henschel Hs 129 (see *Profile* No. 69); but although it proved itself capable of carrying an astonishing variety of sophisticated weapons, the Henschel was never free of the fundamental faults of powerplant selection which hampered it from its first appearance in action. There can be no doubt that the outstanding all-purpose ground-attack aircraft of W.W.II was Sergei Ilyushin's Il-2, known to the world by the sobriquet of *Shturmovik*.

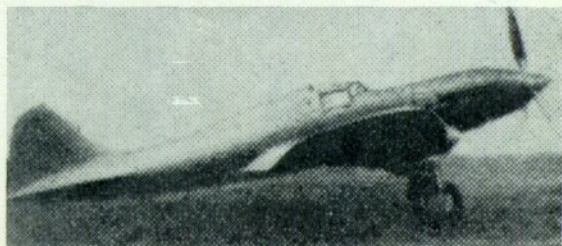
Large, rugged, and with tremendous destructive capacity, the Il-2 was simple and cheap to produce, even crude by Western standards. It was an aircraft which earned the unwavering trust and confidence of its crews; and many V-VS (Soviet Air Force) personnel survived unscathed the severest combat damage to their aircraft, thanks to the armour-plate "bath" which protected the *Shturmovik*'s engine and cockpit. (*Shturmovik* is a general designation for all ground-attack types, and its application to the Il-2 particularly is comparable to the use of the name *Stuka* for the Junkers Ju 87.) The best operating altitude, at the most favourable engine rating, was little over 2,000 ft.; and the majority of Il-2 sorties were flown at between

30 and 150 ft., and as often as not the target would be caught in a *horizontal* storm of rockets and cannon shells! Capable of delivering a large volume of bombs, rockets and shells from minimum altitude; almost invariably returning to base with huge rents and holes in the wings and tail surfaces, but never in the cockpit or cowlings; appearing over land and sea, on all fronts to which the Soviet forces were committed; the Il-2 had no counterpart anywhere in the world. To its pilots it was known and loved simply as *Ilyusha*, surely the first time a whole class of fighting aeroplanes have given birth to a new name for a girl! To the soldiers below it was the "Flying Tank", "Hunchback", and "Flying Infantryman"—surely the highest praise of all, as any ex-infantry soldier will appreciate. The German army called it *Schwarz Tod*—"Black Death".

DESIGN AND DEVELOPMENT

In the Soviet Union the attempts to produce a specialised ground-attack machine began in the year 1930, when such well-known designers as Grigorovich, Porokhovshchikov and Kocherygin attempted to build machines fulfilling several apparently contradictory requirements. There had to be good low-level performance, heavy armament to deal with targets such as pill-boxes, tanks and trains, and good armour protection. The machine would also have to be manoeuvrable, of comparable speed to contemporary fighters (fighter escort would not be practicable on low-level sorties of the type envisaged, and the *Shturmoviki* would thus be self-reliant for defence) and in addition should not be too large.

Rare photograph of the original CKB 57 prototype, which was test-flown by V. Kokkinaki late in 1939.





An Il-2 captured by German forces.

(Photo: H. J. Nowarra)

Between 1930 and 1933 Grigorovich designed two such aircraft, the Tsh-1 and Tsh-2. They were good machines by contemporary standards, but failed because of the lack of a sufficiently powerful engine. The first significant design to appear was S. V. Ilyushin's CKB 55 two-seater prototype, designed during 1938 by Ilyushin's team at the Central Design Bureau. Following Russian procedure, a design contest was held for a ground-attack machine, and Ilyushin's CKB 55 was pitted against the Su-6 of Pavel Sukhoi. Despite certain advantages of the Sukhoi design, Ilyushin won the contest when his competitor failed to meet the deadline. Development continued, and the type was named in *Voyenno Vozdushnye Sily* as the B Sh -2 (for *Bronirovannyi Shturmovik*, Armoured Assault Aircraft).

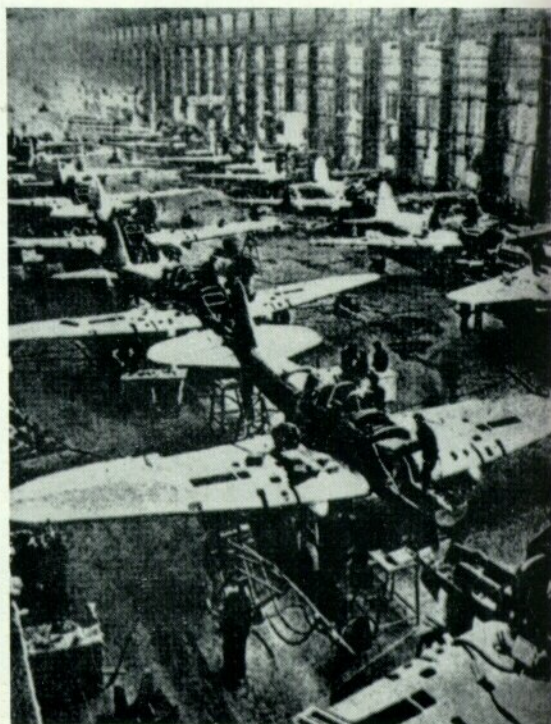
The prototype of the CKB 57, the true prototype for

the single-seater Il-2, was flown in trials late in 1939 by the famous test pilot V. Kokkinaki, and it immediately became obvious that it was underpowered. The 1,370-h.p. AM 35 engine was insufficient to give life to more than four tons of airframe and armour. Re-engined with the 1,680-h.p. AM 38, however, the CKB 57 displayed considerably improved characteristics when test-flown in a new series of trials in October of 1940.

The main features of the CKB 57 included the forward fuselage, built as an armour shell with panels varying between 5 mm. and 12 mm. thickness. The aft fuselage was a wooden monocoque, and the tail unit was of metal construction with dural skinning. Armament comprised two Shkas 7-62-mm. machine guns, two Shvak 20-mm. cannons, rails for eight 82-mm. RS 82 rockets, and a bomb capacity of about

Wartime photograph of Sergei V. Ilyushin in V-VS uniform.

Production line of Il-2m3s in a Siberian plant, 1942.



Il-2 running up on a front-line airstrip; Poland, July 1944.
(Photo: courtesy Skrzydlata Polska)



400 kg. (881 lb.). Level speed reached 470 km./h. (292 m.p.h.) and operating altitude was 2,000 m. (6,500 ft.).

Passing its State Trials in March 1941, the machine went into mass production as the Il-2, and 249 were built before the German invasion of that summer. These were immediately delivered to front-line units, and, operating in small numbers against the advancing German columns, provided some of the few localised Russian successes of that disastrous year. Production costs were cut thirty-eight per cent during the first year and the numbers quickly increased; but the rapid advance of the German forces forced the evacuation of plants at Moscow and other industrial centres in European Russia to safer areas in the Urals and to hurriedly-erected factories in Siberia. The period of evacuation, during the hard winter of 1941, was not wasted time, however. Further development studies were carried out with a view to simplifying and speeding production techniques, and only two months after the evacuation Il-2s were once more reaching the front. By this time criticisms of the aircraft were making themselves felt; there was no active rear armament, and this was proving hazardous during a period of almost total German air superiority over the front. The 20-mm. cannons were not very effective against the new German armoured vehicles; and the aircraft was rather difficult to handle. Although the Il-2 continued in full production, and the numbers supplied to the squadrons doubled between summer 1942 and summer 1943, it was obvious that modifications would have to be effected.

THE TWO-SEATER APPEARS

A conference held in the spring of 1942 between the design team and representatives of the combat pilots formulated the final requirements for the "new look" Il-2. The most obvious change was the re-design of the cockpit to provide accommodation for a rear gunner; and the armour-plate "bath" was lengthened accordingly. Armament was improved by the addition of a



Il-2m3 donated in the name of Lena Azarenkova in memory of her father after his death in action; the inscription may be translated as "From little Lena, for Papa". Azarenkov commanded a squadron of the 237th Assault Regiment, V-VS, at the time of his death.

BS 12.7-mm. machine gun in the rear cockpit (sometimes replaced by a UBT weapon of similar calibre) and by the substitution of high muzzle velocity VJa 23-mm. cannons for the Shvaks. Engine power was boosted by the adjustment of the compression ratio, providing the new AM 38 F powerplant with 1,750 h.p. All these changes were introduced to production Il-2s, and some single-seater machines with all other modifications incorporated flew under the designation Il-2M.

From August 1942 the front-line squadrons received the new two-seat Il-2m3 ("model 3"); and despite the addition of a second crew position, the better aerodynamic silhouette of the longer cockpit enabled the Il-2m3 to achieve a top speed of 404 km./h. (251 m.p.h.). A parallel development was the Il-2U trainer, with reduced armament and the controls fully duplicated in the second cockpit.

In 1943 the armament of the Il-2m3 was strengthened yet again, the VJa cannons giving place to

Underwing racks are clearly visible in this view of an Il-2m3 in flight.
(Photo: courtesy Skrzydlata Polska)



Il-2m3 of Polish 1st Mixed Air Corps taking off, Germany, March 1945



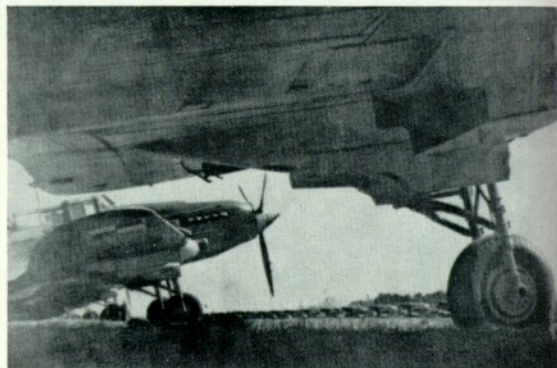
long-barrelled N-37 (or 11 P 37) weapons, of 37-mm. calibre and improved armour penetration ability. Optional devices which also appeared during this period included containers for 200 small bombs of the PTAB 2,5-1,5 class; and the DAG 10 grenade launcher, a rather strange mechanism which ejected infantry grenades on small parachutes in the path of pursuing fighters. The Il-2m3(Modified) saw action in any numbers for the first time during the Kursk Salient battles of June–July 1943, which is now judged to have been the greatest tank battle in history. Like its near-counterpart, the Henschel Hs 129, the *Shturmovik* distinguished itself during these actions, and caused huge losses in vehicles to the German *Panzer* Divisions and self-propelled artillery units. Even the new Pz.Kw.VI Tiger tank fell easy prey to the 37-mm. cannon of the Il-2.

During the above-mentioned armament changes, considerable structural alterations were introduced. As already stated, early-model Il-2s had wooden rear fuselage structure, and some even had wooden tail surfaces. The Il-2m3(Basic) retained the wooden rear fuselage, with all-metal wings and tail surfaces. Il-2m3(Mod.)s appearing in 1944 were of all-metal construction throughout, and the gunners' back and front plates were replaced by an integral rear bulkhead for the armour "bath".

Later additions to the armoury included the occasional replacement of the RS 82 rockets by RS 132 projectiles of 132-mm. calibre, equipped with either hollow charge or "blockbuster" warheads for use against buildings and installations. Internal wing bomb racks could carry between 400 and 600 kg. (881 and 1,321 lb.); and with the AM 38 F engine the aircraft could take off from a rough grass airstrip with

Ground crew removing camouflage from a V-VS Il-2m3 based in Poland, 1944.

(Photo: courtesy Skrzydlata Polska)



Polish Air Force Il-2m3s; note underwing detail.

full load. Some models were modified to carry a single 53-cm. torpedo below the fuselage, and others carried a single reconnaissance camera behind the gunner's cockpit. (It should be noted that all these modifications were carried out on standard production models without any firm change in designation, and distinguishing between the different sub-types of Il-2m3 is sometimes almost impossible for current researchers.)

The final "modification" was really a complete re-design, seeing expression in the Il-10, which carried the NATO code-name "Beast" after its encounters in the Korean War. With new wings, a different silhouette, new armament, new undercarriage, new engine (2,000-h.p. AM 42), the Il-10 was generally too late to see widespread war service. By the time it had its major baptism of fire in Korea, the Il-10 was no longer an effective weapon of air warfare; in the age of the Sabre and the Meteor, the *Shturmovik* was a flying coffin rather than a flying tank.

THE IL-2 DESCRIBED

All versions, from the CKB 57 to the Il-2m3(Mod.) were constructed in similar fashion, as follows:

The aircraft was a cantilever, low-wing, single-engined monoplane powered by a liquid-cooled 12 (Vee) cylinder A. Mikulin engine. The focal point of all versions was the forward fuselage, which, from the nose to the rear of the cockpit, was pressed as a one-piece armour bath with integrally-pressed engine bearers and cooler nest. Both single-seat and two-seat variants had the rear of the bath closed with a 13-mm. armour plate; the canopy was constructed of armour-glass and 8-mm. steel plates, with a 55–65-mm. armour-glass windscreen; and the oil cooler beneath



Views of the Il-2m3 preserved at the Polish Armed Forces Museum at Warsaw: note the extremely heavily armoured cockpit. The great crew and engine protection afforded by the Ilyushin's construction led to its being christened "The Flying Tank" by wartime crews, and one of the outstanding features of its operational career was its ability to absorb considerable combat damage.

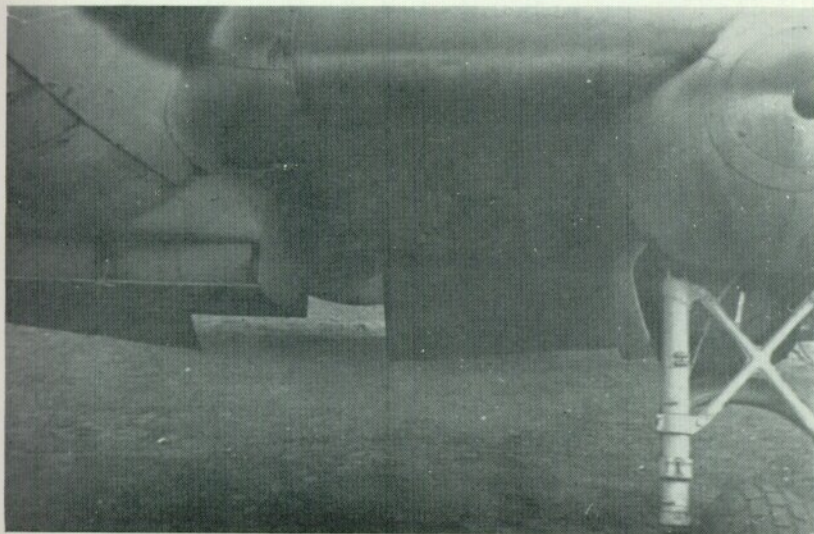
the fuselage was protected by 8-mm. sheets. In the Il-2, the armour weight totalled approximately 700 kg. (1,542 lb.), and about 950 kg. (2,092 lb.) in the Il-2m3. The forward fuselage had no construction members; the armour bath itself served as the skeleton, a great design achievement which allowed considerable weight-saving (as well as greater protection) in comparison with a conventional structure to which armour had to be added. No calibre below 20 mm. could pierce this armour shell, and even 20 mm. often failed to penetrate if the interceptor's range and deflection were not perfect; a hard condition to fill when attempting to hit a relatively small aircraft jinking and swerving through obstacles at 400 km./h. (248 m.p.h.) thirty feet above the ground.

The following distinctions may be drawn between the main variants:

CKB 57. Wooden monocoque rear fuselage, wings

and tail surfaces of metal construction, metal-skinned. Main undercarriage members retractable, fixed tail wheel. Rear part of cockpit canopy was covered with steel plates. **Armament:** Two Shkas 7·62-mm. machine guns, two Shvak 20-mm. cannon, eight 82-mm. *Raketny Snaryad* rocket projectiles or 500/600 kg. (1,101/1,321 lb.) bomb load in wing chambers. **Engine:** Twelve-cylinder liquid-cooled (60° Vee) AM 38 engine of 46·8 litre working volume. Cylinder bore 160 mm. (6·3 in.), stroke 190 mm. (7·6 in.), compression ratio 6·8, used with 95 octane fuel. Take-off power 1,600 h.p. at 2,150 r.p.m. and fuel consumption of 305 gram/h.p./hour. Emergency power 1,550 h.p. at 2,150 r.p.m. and 2,000 m. (6,500 ft.) altitude, fuel consumption 285 gram/h.p./hour. Cruising power 1,410 h.p. at 2,150 r.p.m., fuel consumption 270 gram/h.p./hour. Weight to power ratio 54 kg./h.p. (1·2 lb./h.p.).

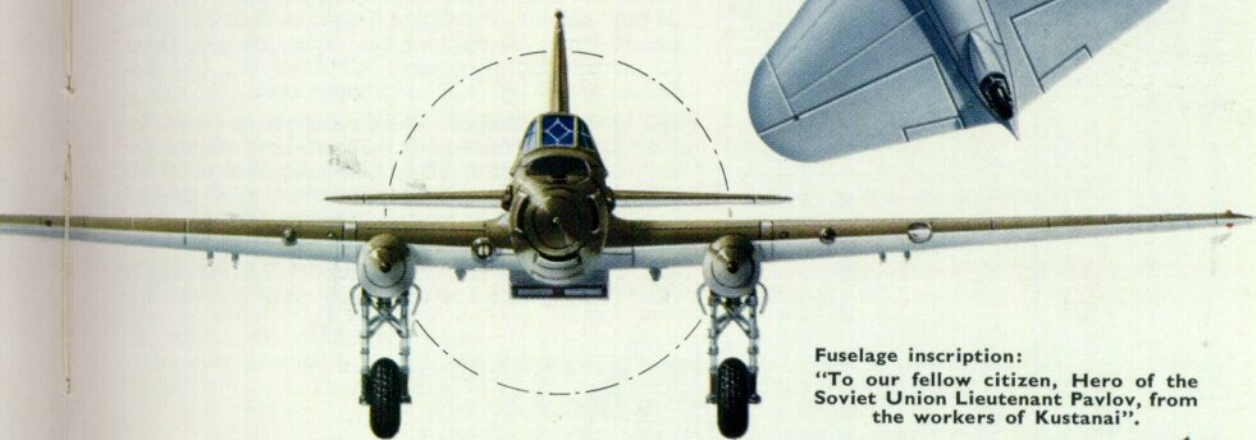
(continued on page 10)







Ilyushin Il-2m3 Modified (Il-P-37 anti-tank cannons) flown by Lieutenant, later Captain, I. Pavlov of the 6th Special Assault Regiment, V-VS, Baltic Coast, February 1945.



Fuselage inscription:

"To our fellow citizen, Hero of the Soviet Union Lieutenant Pavlov, from the workers of Kustanai".





Hero of the Soviet Union Major Kitayev poses on the wing of his Il-2m3. This pilot flew with the 3rd Squadron, 3rd Polish Assault Regiment. On the original negative it is possible to distinguish guide lines marked on the windscreen as a form of artificial horizon and an indication of dive angles, after the fashion employed by the Luftwaffe on Junkers Ju 87s.

Il-2 Basic. Rear fuselage wooden monocoque, containing radio equipment, oxygen bottles, battery, pneumatic bottle and flap actuation system. Centre fuselage and wing centre section built as integral unit. Wings and tail surfaces of mixed construction; inner wing wood, outer wing all metal, fin and stabilisers wood (all-metal on late production models), control surfaces fabric covered. Metal flaps of the "crocodile" type, pneumatically operated with two-stage movement. Rudder and elevators actuated by push rods, ailerons by control cables. Undercarriage retractable into underwing fairings, wheels partially exposed when fully retracted. Double undercarriage legs with oleo-pneumatic shock absorbers. Fixed tail wheel with small fairing. AM 38 engine driving metal three-blade variable pitch propeller. **Armament:** Two 7-62-mm. Shkas machine guns, two 20-mm. Shvak cannons, four RS 82 rockets or 400 kg. (881 lb.) bomb load. **Dimensions:** Span 14-6 m. (48 ft. 1/2 in.), length 11-6 m. (38 ft. 1/2 in.), height 3-4 m. (11 ft. 1 1/2 in.), wing area 38-5 sq. m. (414-4 sq. ft.). **Weights:** Empty 3,800 kg. (8,370 lb.), loaded 5,340 kg. (11,762 lb.). **Performance:** Max. speed 450 km./h. (279 m.p.h.), cruising speed 350 km./h. (223 m.p.h.), ceiling 4,000-7,500 m. (13,100-24,600 ft.), range 600-750 km. (375-469 miles).

Il-2 M. All data except powerplant and armament similar to above. Two VJa 23-mm. cannon replaced the Shvak weapons. Eight rails for RS 82 or 25 kg. (55 lb.), 132-mm. RS 132 projectiles. AM 38 F engine with compression ratio of 6-0, take-off power 1,700 h.p. at 2,350 r.p.m. and fuel consumption of 325 gram /h.p./hour, emergency power 1,550 h.p. at 2,150

r.p.m. at 200 m. (655 ft.) altitude with fuel consumption of 285 gram/h.p./hour, cruise power 1,410 h.p. at 2,150 r.p.m. and 3,000 m. (980 ft.) altitude, fuel consumption 270 gram/h.p./hour.

Il-2 Model 3. Slightly modified AM 38 F engine with stroke increased by 6-7 mm. to 196-7 mm. This caused some increase in fuel consumption (to 325 gram/h.p./hour) but gave smoother engine control and increased mechanical efficiency. Take-off power rose to 1,770 h.p. The addition of the rear cockpit and elongation of the armoured compartment caused some increase in empty weight, but other minor structural changes allowed some cuts in all-up weight and total weight only rose by about 100 kg. (220 lb.). The airframe was of entirely metal construction. The dimensions were identical to the Il-2 basic model. **Weights:** Empty 4,360 kg. (9,604 lb.), loaded 5,510 kg. (12,136 lb.). **Performance:** Ceiling fell to 6,000 m. (19,500 ft.), range remained at 600 km. (375 m.) but max. speed fell to 404 km./h. (251 m.p.h.). **Armament:** Two VJa 23-mm. cannon, two Shkas 7-62-mm. machine guns, one 12-7 mm. BS machine gun in rear cockpit, DAG 10 grenade launcher, eight RS 82 or RS 132 projectiles or 600 kg. (1,321 lb.) bomb load.

Il-2 Model 3 Modified. All data as above, except for the substitution of N-37 or P 37 anti-tank cannons for the VJa weapons; and the addition in 1943 of PTAB 2-5-1-5 hollow-charge anti-tank bombs of 2-5 kg. (5-5 lb.) weight, a full load comprising 200 of these weapons.

Il-2T. Soviet Naval Aviation model differing only in that it had racks below the fuselage centre section for



A group of Il-2m3s and La-5s in Czechoslovakia, 1944; in the foreground, an Li-2, licence-built version of the C-47.

(Photo: courtesy Skrzydlata Polska)

one 533-mm. torpedo of a class designed for launching at extremely low altitudes.

Il-2U. Two-seat trainer conversion produced initially in the Naval Aviation workshops under the leadership of Engineer-Colonel Sidorov. Armament reduced to two VJa cannon and two RS 82 or 600 kg. (1,321 lb.) bomb load.

SHTURMOVIKI IN SERVICE

There were three main types of approach used by Il-2 units in combat. In open country and against targets such as vehicles, emplacements and attacking infantry the aircraft would make its attack run at between fifteen and thirty feet above the ground releasing its weapons and firing fixed armament horizontally. Pinpoint targets such as individual buildings in a town or pill-boxes would be bombed and strafed from the conventional dive-bombing angle, which was extremely steep in the case of the Il-2. The third and best-known tactic was the so-called Circle of Death. The *Shturmoviki* would cross the front-line to one side of the target area, then circle and attack from the rear in a shallow dive, line astern. After recovery each aircraft would repeat the circle and attack again, and repeatedly, until all ammunition was expended. The beauty of this method was that for some fifteen to thirty minutes the enemy had at least one aircraft overhead and were under fire for the whole period. The effectiveness of the Circle of Death was demonstrated at Kursk; massed use of the Il-2 caused the German 9th *Panzer* Div. to lose seventy tanks in twenty minutes, on the 7th July 1943. Two hours of continuous attack cost the 3rd *Panzer* Div. 270 tanks and nearly 2,000 casualties; four hours saw the virtual extinction of the 17th *Panzer* Div. as an effective unit, with 240 vehicles destroyed out of a strength of approximately 300.

A high level of combat readiness was maintained by V-VS ground-attack units; in two years the 9th Mixed Air Corps, led by General Z. Tolstikov, made over 8,300 combat sorties. In a single day's fighting round Moldava an Assault Division carried out over 500 sorties. In his four years of combat a typical pilot, C. Briuhanov, carried out 140 combat missions, destroyed forty tanks, three self-propelled guns, one train, 152 transport vehicles, twenty mortar emplacements, and thirty-four anti-aircraft nests. Briuhanov was killed in May 1945, within sight of victory. Many *Shturmovik* pilots were Heroes of the Soviet Union; Double Gold Stars were worn by T. Biegeldinov, Mylnikov, Aleksienko, and Musa Gardiyevev. Single Stars were awarded to an even larger number, among them Captain I. Pavlov of the 6th Special Assault



Briefing before a flight beside a Polish Air Force Il-2m3 in 1947.

Regiment, Captain Diakonov and Captain Yeldyshev of the 9th Mixed Air Corps, Guards Colonel Bielousov and Guards Major Chochlatshov of Maj.-General Tokariov's 6th Assault Corps. Senior Lieutenant Nikitin, Major Pavlenko and Captain Nikolayev of General Kamanin's 5th Assault Corps also earned this decoration, as did Grigorij Sivkov of the Hungarian V-VS Group and Major Kitayev of the 3rd Squadron, 3rd Polish Assault Regiment.

As far as is known, no entirely female-manned unit of Il-2s operated. However, the aircraft often carried mixed crews. Probably the most famous woman Il-2 pilot was Senior Lt. Anna Yegorova, who was Navigation Leader of her regiment. After 260 missions, and two awards of the Red Ensign order, Yegorova was shot down and captured during a strafing mission in Poland, her gunner E. Nasarkina being killed. She was liberated from Küstrin camp after the war, desperately ill from the brutal treatment she had received, but alive. She had in the meantime been awarded the Gold Star posthumously.

It is hard to pick examples from the fund of anecdotes connected with the "Flying Infantryman's"

Loose formation of Il-2m3s over the ruined outskirts of Berlin in May 1945. The apparent distortion of the outline of the vertical tail surfaces is caused by the unit marking code, involving the painting of the leading edge white.





Hero of the Soviet Union Lt. I. Pavlov, of the 6th Special Assault Regiment, photographed with his aircraft on the Baltic Coast in 1945. Inscription reads "To our fellow citizen, Hero of the Soviet Union Lieutenant I. Pavlov, from the workers of Kustanai". Kustanai was Pavlov's home town. Note also the unusual style of the fuselage star.

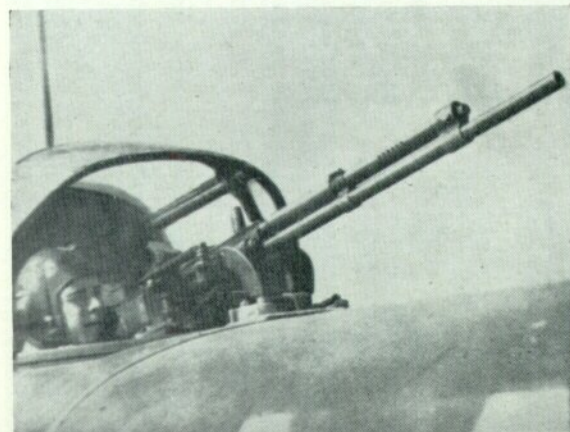
service; but the following may be taken as representative. Aircraft of the 9th Mixed Air Corps used steel grappling-hooks on long cables to tear up German field telephone lines in Rumania immediately before a Russian attack; predictably, the Germans began to use large numbers of liaison vehicles which were massacred by waiting Il-2s.

The surrender ultimatum was dropped to the German Army Group South Ukraine from an Il-2. It was accepted.

Il-2s were often used for personal transport under more or less pressing combat conditions; one man could be accommodated lying in the rear of the gunner's compartment, and the crews of crash-landed aircraft were on many occasions picked up and taken safely home in the undercarriage fairings, strapped to the extended undercarriage legs.

In Korea in 1945 an Ilyushin pilot, Lt. Yanko, was killed when he deliberately rammed the control point of a Japanese-held harbour installation in his damaged aircraft. Senior Lt. Koratevitch and Lt. Bykov were posthumously awarded the Gold Star for their sacrifice and courage in ramming a German escort vessel in the Baltic on 19th November 1943.

Rear gunner of Il-2m3 manning the super-heavy 12.7 mm. BS machine gun.



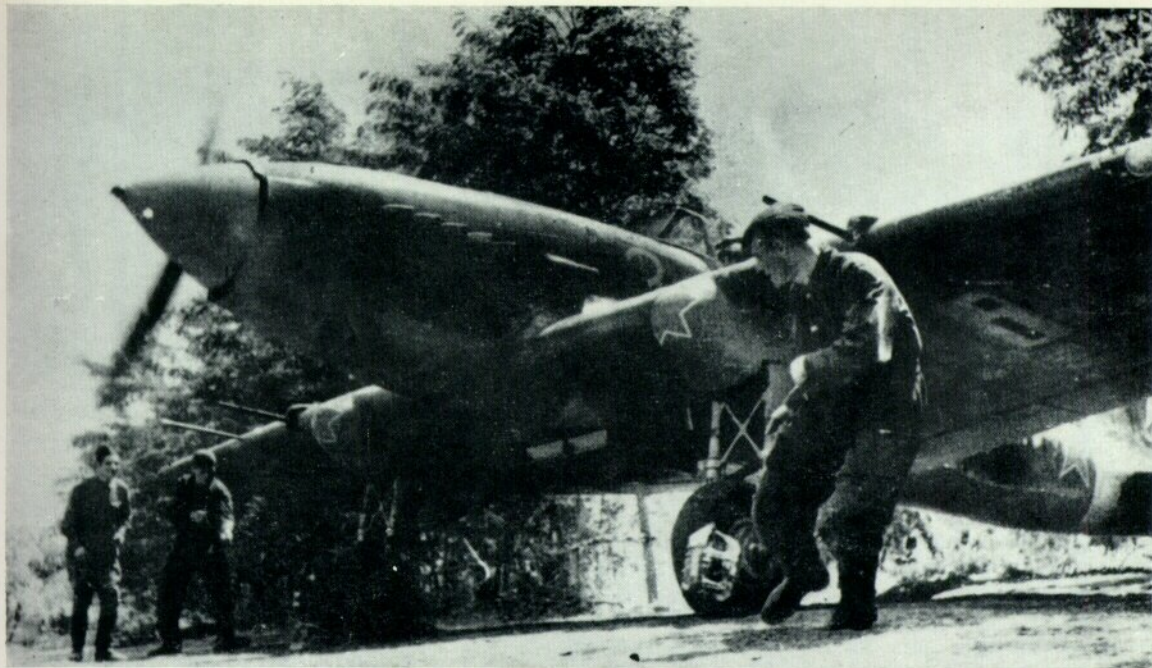
Lt. V. Knishnik saved a hard-pressed comrade when during a combat with Bf 109s in 1944 he rammed the fin and cockpit of one of the enemy fighters with his port wing-tip. The Bf 109 crashed.

In 1942 Hero of the Soviet Union S. Kuznecov was returning from a recce mission near Kalinin when his flight was attacked by Messerschmitts and his Il-2 shot down. When one German fighter landed on a level strip of ground nearby to collect souvenirs of his "kill" and walked over to the crashed Ilyushin, Kuznecov left his hiding place, sprinted to the Messerschmitt, took off and returned to his base after near-death at the hands of Russian fighters. His luck ran out in 1944 over Poland, when anti-aircraft fire

Il-2m3 control column and firing buttons.

(Photo: courtesy Skrzydlata Polska)



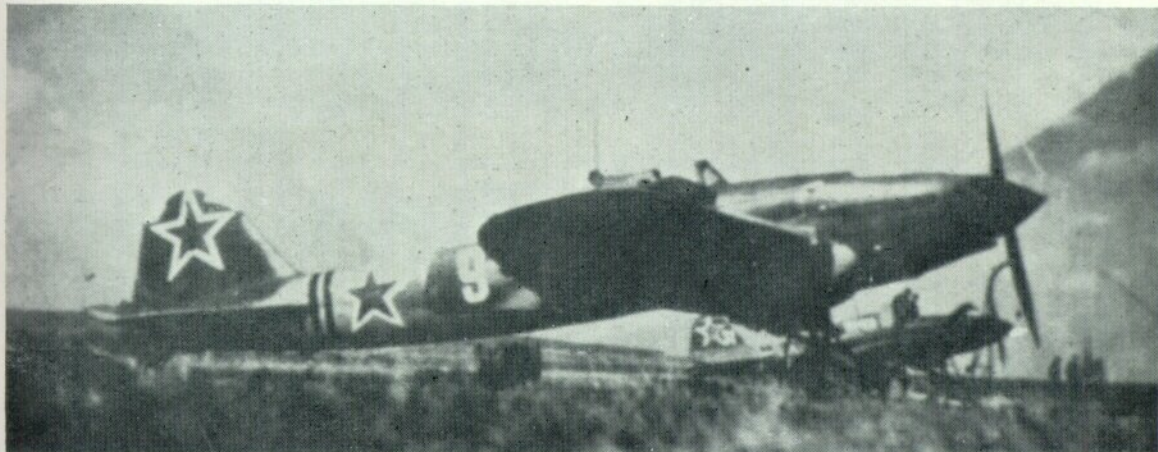


Above: Chocks away! An Ilyushin with colourful decoration on the undercarriage fairings.

(Photo: Imperial War Museum)

Below: Shturmovik photographed at Prostějov in Czechoslovakia in 1945.

(Photo: Zdenek Titz)



Below: Characteristically, this crashed II-2 has broken in two behind the cockpit; the fuselage centre-section remains relatively undamaged despite severe punishment to the other sections of the aircraft.

(Photo: H. J. Nowarra)





Lufwaffe officers and N.C.O.s examine a wrecked Il-2; they are apparently flak-artillery personnel.



(Photos: Der Adler)

blinded him. He succeeded in doing a wheels-up landing despite his wounds; but he never saw again.

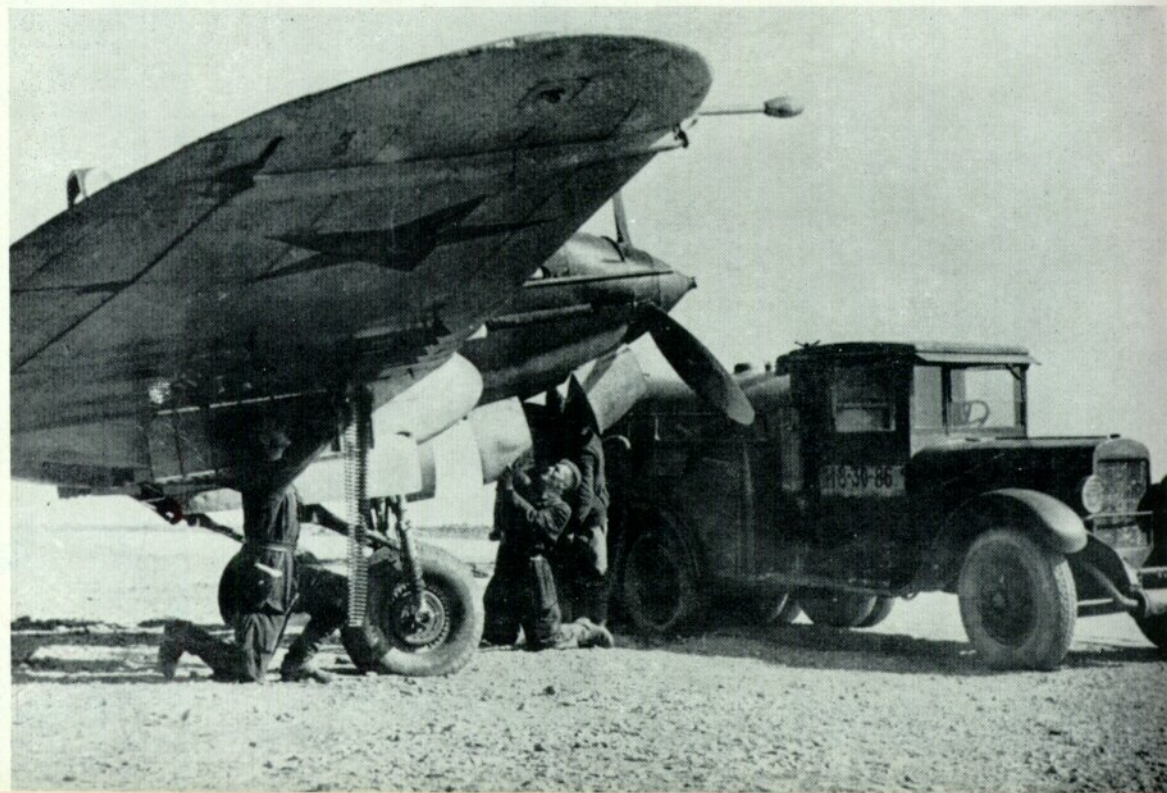
Many Il-2s were presentation aircraft, bearing inscriptions appropriate to the donors of the machine. One unusual incident occurred after a squadron commander in the 237th Assault Regiment was killed in action flying an Il-2m3. His seven-year-old daughter, Lena, sent her savings from pocket-money of about 100 Roubles (a few shillings, about one U.S. dollar) to Generalissimo Stalin with the request that the money be used to buy a new *Shturmovik* for her father's comrades to avenge him. The letter was received, and Lena was sent a message of gratitude signed by the Soviet leader; and a new Il-2m3 of her father's old unit was inscribed "From little Lena, for Papa". The cynical may regard this

story as unlikely; but a photograph of the aircraft concerned appears in this *Profile*.

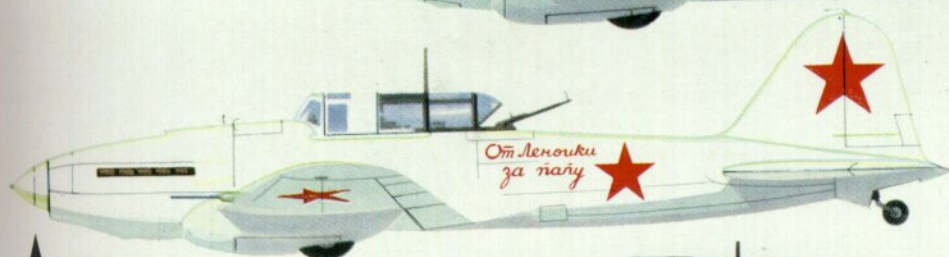
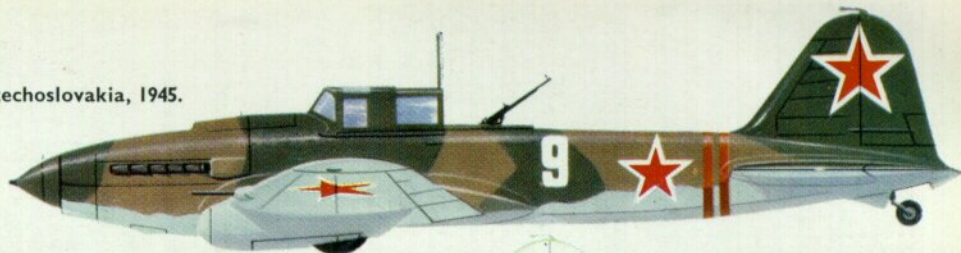
A final anecdote concerns what is believed to be the only occasion on which U.S. and Soviet aircraft flew together on a combat mission. On 9th May 1945 two squadrons of Il-2m3(Mod.)s, led by Major Platonov of the 951st Assault Regiment, rendezvoused with four P-38 Lightnings of the U.S.A.F. over St. Pölten in Austria and together they strafed and destroyed a German road column, with one Ilyushin unit providing top cover and beating off an attempt at interception by a section of Fw 190s.

In conclusion, the opinions of two famous men on the Il-2; Eddie Rickenbacker, American W.W.I ace, was shown a demonstration of the *Shturmovik*'s abilities and recorded the view that it was the best

Ground-crew arming a *Shturmovik*; note underwing rocket racks and access panels under the nose. (Photo: Imperial War Museum)

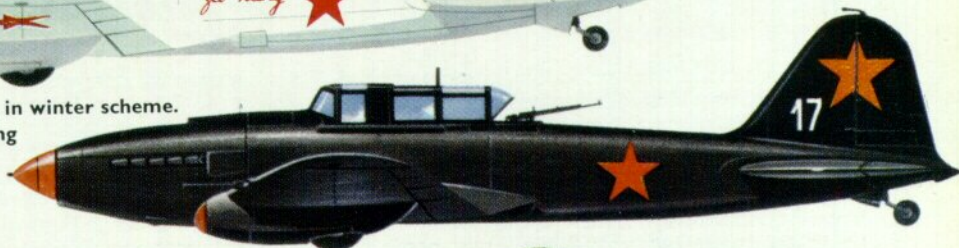


Il-2m3, Prostějov, Czechoslovakia, 1945.



*От Ленокки
за папу*

Il-2m3, 237th Assault Regiment, in winter scheme. Presentation a/c commemorating a dead squadron C.O., Azarenkov, and bearing legend "From Lenchka for Papa".



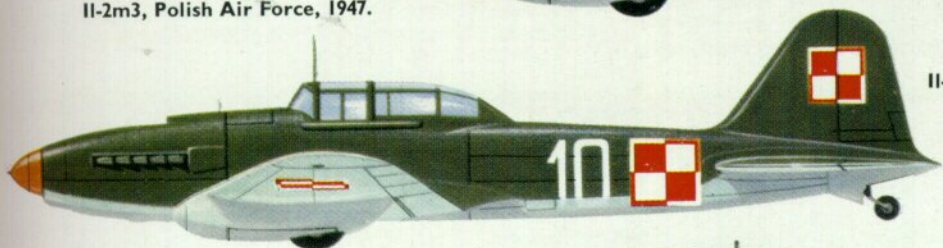
Il-2m3 in overall black night intruder finish.



Il-2m3, 3rd Assault Regt., 1st Polish Mixed Air Division, North Poland, 1945.



Il-2m3, Polish Air Force, 1947.



Il-2U, Polish Air Force, 1947.



Il-2m3, Yugoslav Air Force, 1947.

Yugoslav Air Force insignia, 1947.



Il-2U, Yugoslav Air Force, 1947.





Crash-landed Il-2m3; the pilot was a holder of the Order of the Red Banner, as shown by the nose marking.

(Photo: Seeley)

aircraft of its type in the world; that his country had never produced anything in the same class of machine; that as the only truly armoured aircraft in the world it should form part of the equipment of every army and every air force.

The part played by the rugged "Flying Infantryman" in Russia's victory is summed up in the words of Stalin to the manufacturers: "Our Army needs the Il-2 as much as it needs bread, as much as it needs the air it breathes."

SOVIET AIR FORCE UNITS

One of the most important features in the career of the Il-2 was its use in large numbers. Ilyushin-equipped units comprised the following sub-divisions. The largest tactical unit was the Air Assault Corps, which contained two Divisions each of three Regiments. Each Regiment had three Squadrons and each Squadron two *Zvenos* or Flights of four or five aircraft. Thus an Assault Corps had some 200 aircraft; and the basic combat formation was the *Zveno*. Each Regiment had some thirty combat aircraft and two Il-2U trainers, plus a few liaison machines, usually Po-2s.

The average bomb load of a four-machine *Zveno* was 1.6 tons, and for short-range missions up to 2.4 tons could be carried. In action, one Regiment, with

six *Zvenos* each carrying out three sorties daily could deliver 43.2 tons of bombs, apart from rockets and cannon-fire.

Almost all operations described above were carried out over land, but the Soviet naval air element used the type for torpedo dropping as mentioned earlier, and the V-VS carried out many anti-shipping sorties. On one occasion Maj. Kitayev of the 3rd Polish Assault Regiment and his wingman, flying Il-2m3s, attacked and sank a 6,000-ton German transport ship; this was the exploit which won Kitayev his Gold Star.

The first foreign Ilyushin unit was the 1st Polish Mixed Air Division's 3rd Regiment. The Division was formed in 1943 with one fighter Regiment, one light bomber Regiment, and the 3rd Regiment with thirty-two Il-2m3s. They first saw action near Warsaw on 23rd September 1944, and ended the war at Metlow airfield near Berlin. The Polish air element was expanded into the 1st Polish Mixed Air Corps, comprising a Division of fighters, another of bombers, and an Assault Division of Il-2m3s, one hundred aircraft strong. This unit operated over the Oder-Nysa river line and ended the war west of Berlin on 9th May 1945. The 1st Czech Mixed Air Division's 3rd Assault Regiment also saw action during 1944-45.

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One of the Il-2s lost during the great German advances of 1941. Note absence of star on vertical tail surfaces, an early marking style. In the background, an I-16.

