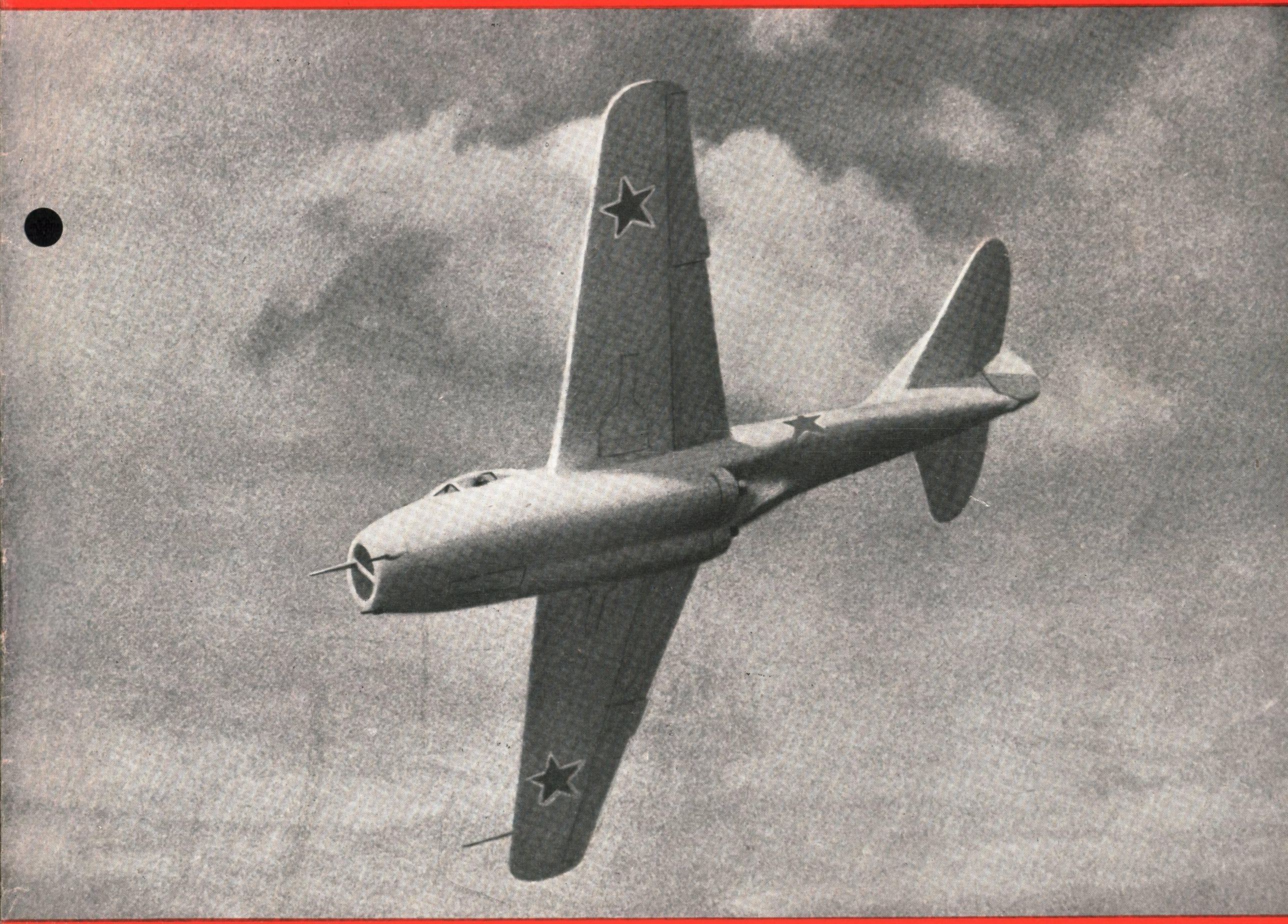
THE INTER SERVICES

AIRCRAFT RECOGNITION

Journal



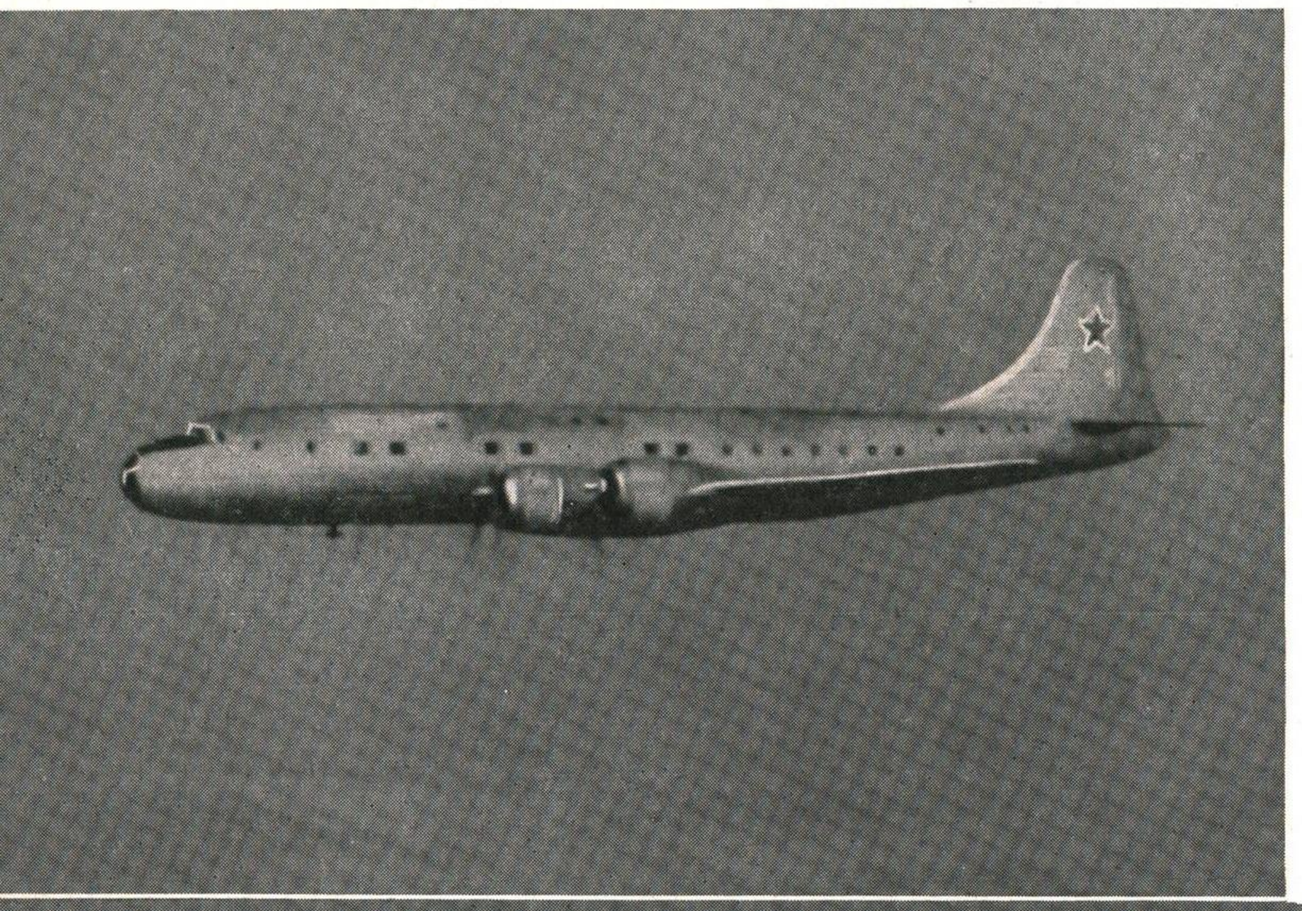
SOVIET AIRCRAFT NUMBER

New Series

MAY 1948

Volume 2. No. 10

TU-70



A.N. TUPOLEV is the designer of the TU-70, but it does not appear that his design is an original one, for its resemblance to the Boeing B-29 Superfortress is difficult to deny. Since the Russians are known to have acquired some B-29's, which force-landed in Manchuria in 1945, it is more than probable that the TU-70 design is based upon that American aircraft.

Many structures of both aircraft are identical in shape and size, as, for example, in the nose panels of the fuselage, the wing and tail units, the engines and the undercarriage. Even the fuselage, though longer and having the addition of a shallow step formed by the cockpit windshield, is very much on the lines of that of the B-29. Boeings say that their engineers have recognised, from photographs of the exterior of the TU-70, more than twenty items that are exact duplicates of features of the B-29. They concede that the fuselage is of domestic Soviet design.

The main recognition differences between the two aircraft are : the wing of the TU-70 has been " dropped " to the low position and wing-root fillets have been added, whilst the wing of the B-29 is in the mid position and has no root fillets.

The version of the TU-70 shown here is apparently a transport one. It will carry 72 passengers. What other versions are to be expected is not known at present.

Duty : Long-range Military and Civil Transport.

Motors : Four radials, probably Russian-built Wright Duplex Cyclones of approximately 2,200 h.p. each.

Span : 141 ft. 3 ins. Length : 119 ft.



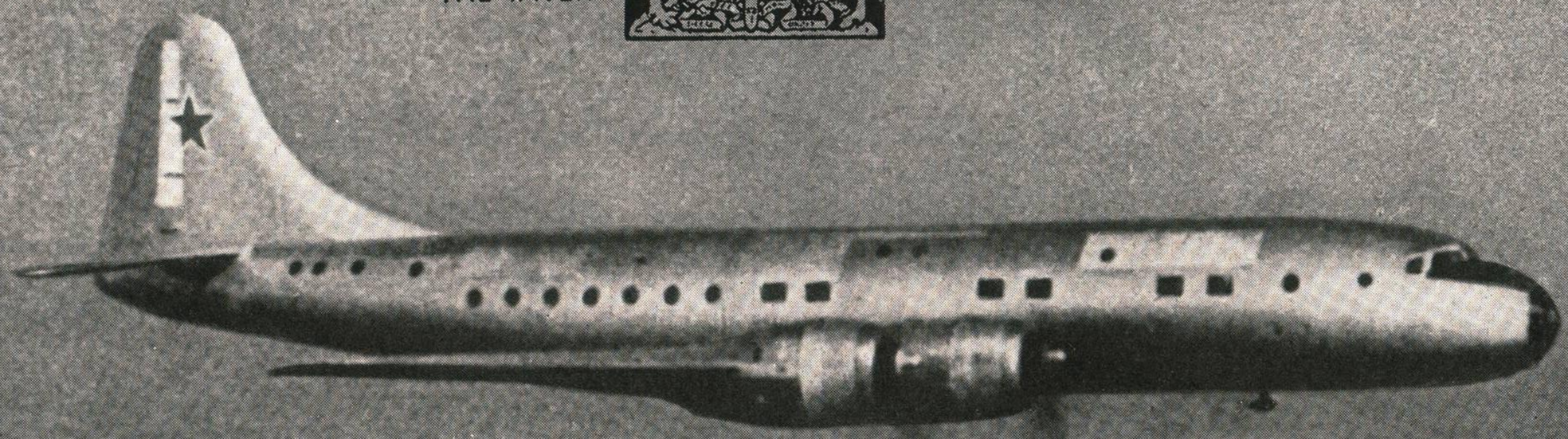




MAY 1948 Vol. 2. No. 10

THE INTER SERVICES

AIRCRAFT RECOGNITION JOURNAL
(NEW SERIES)



TU-70

Soviet Aircraft—Face Value

FORTY THOUSAND aircraft per annum is said to be the post-war rate of aircraft production in the Soviet Union, according to Press reports. This figure undoubtedly includes both Military and Civil aircraft types although no clue is given as to the respective proportions of each.

The Soviet aircraft industry was not, until comparatively recently, reckoned as of great importance, nor were its aircraft highly regarded. Up to the early nineteen-forties Soviet aircraft gave the impression, to judge from appearances, that they were, almost without exception, clumsily conceived, and badly built. This might have been quite a wrong impression, but Soviet reticence concerning them and a steadfast refusal to release anything but the most meagre information concerning its industry did not help to destroy that impression, and what information was released did not reveal their aircraft to be in the van of the world's contemporary designs. In fact, Soviet aircraft appeared to be back numbers.

Quality

The reason for this state of affairs was not far to seek, for a Russian aircraft industry of any consequence did not exist before 1922—for that matter, neither did the Soviets themselves, as such. Even when they started, their sole pre-occupation appeared to be to buy foreign aircraft and then to copy them. It was not until 1928, on the introduction of the first Five Year Plan, that the Soviets really got an aircraft industry going, and between the years 1928 and 1940 there was scarcely time for them to breed a race of first-rate aeroplanes.

During the Spanish Civil War, and later in Finland, the Soviets received a sharp lesson. The qualities of their aircraft were shown to be considerably behind contemporary Western types. They lacked originality in design, were poorly equipped and technically inferior.

● It must be said that, to some extent, the Russians learnt their lessons, but even so they were technically and numerically unequal to meeting the first savage German onslaught upon them in 1941. But meet it they did : with I-15 Chato and I-16 Rata fighters and SB-2 bombers. It is said that they were caught re-equipping ; but whatever was going on, it was apparent that unless some technical and military assistance was at once given to the Soviets by the Western Allies, matters would become very difficult, if not disastrous, for the Soviet Union. So prompt aid was despatched, not only in the form of aircraft and equipment, but also machine tools, and by giving technical and scientific advice and information. In a recent statement, President Truman said that the United States supplied 13,300 aircraft, under lend-lease, to the Soviet Government.

● During 1942 and 1943 the Soviets brought out some improved designs of bomber and fighter aircraft, some of which in appearance and, it subsequently transpired, in performance were a good step ahead of anything else they had ever produced. A few were in fact equal in some aspects of performance to similar aircraft then being used by their Western Allies and by their enemies. Among them were such aircraft as the PE-2 and the famous IL-2 Stormovik. Of subsequent designs which the Soviets have produced, some seem to have maintained parity with Western standards in appearance and in performance, though many others are still behind the times.

So much for quality.

Quantity

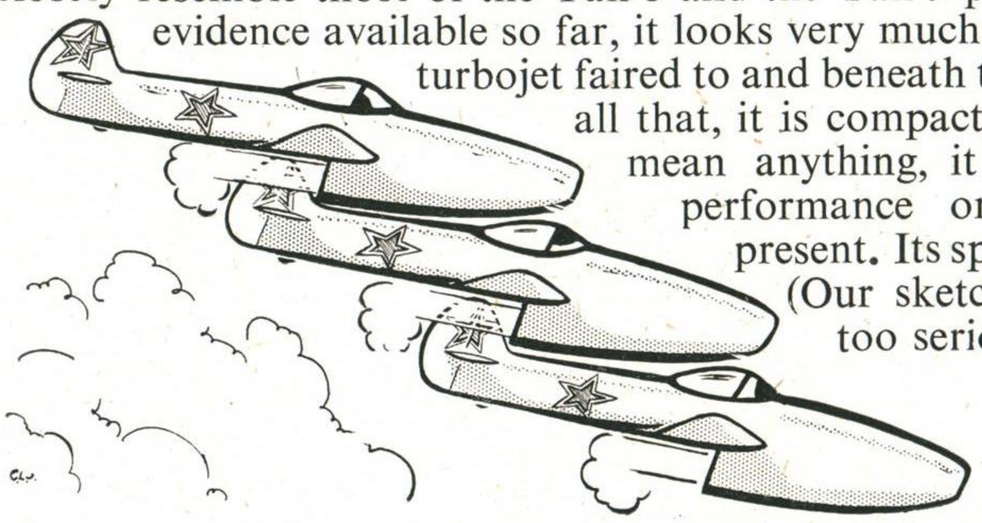
British and American aid, during the war, enabled the Soviets to expand their aircraft industry far beyond the limit that could otherwise have been achieved, and, whatever it may or may not have been in pre-war years, it must now be considered to have a large production potential. During the war period, Factory 153 in the Soviet Union, possibly one of those " beyond the Urals," produced 15,000 Yak aircraft of various types. It is interesting to compare this figure with those given by President Truman above.

● Apart from Allied aid, however, and as if to clinch matters for them, a very large part of the German aircraft industry, including a large proportion of its most famous component constructors, fell—lock, stock, and research—into eager Soviet hands. Arado, Blohm und Voss, Dornier, Focke-Wulf, Heinkel, and Junkers concerns were among those which contributed, through the misfortunes of war, a sizable share of booty, including plant, scientific and technical manpower, and many plans of projected jet and rocket-powered military aircraft. On the face of it, the figures of production capacity for the Soviet aircraft industry, mentioned earlier, would not seem to be optimistic.

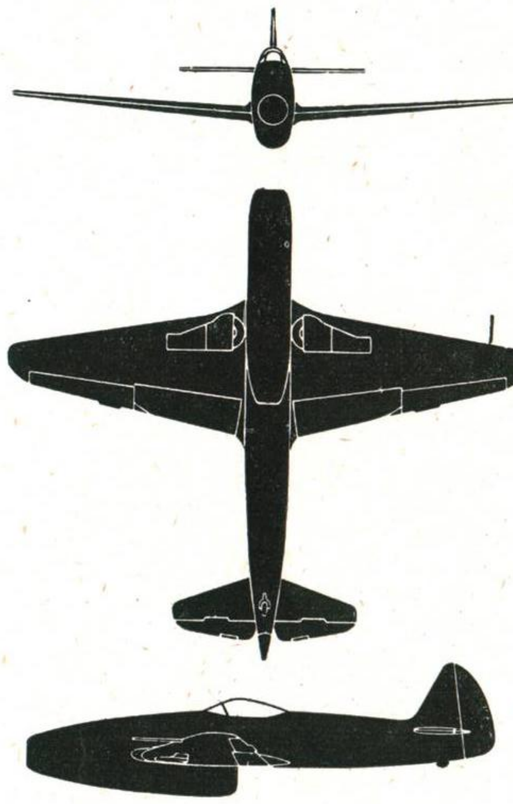
● Continuing Soviet reticence concerning technical details of its latest aircraft, leaves the world to guess and calculate upon their merits and demerits. But, on face value, we have no hesitation in saying that the two jet-fighters, glimpsed as it were through chinks in the Iron Curtain, seem to show considerable promise. If they can be taken as token of the progress of Soviet design technique, and the production rate of forty thousand aircraft per annum is correct, the Soviet aircraft industry, even discounting present ex-enemy assistance, has done very well in the last seven years.

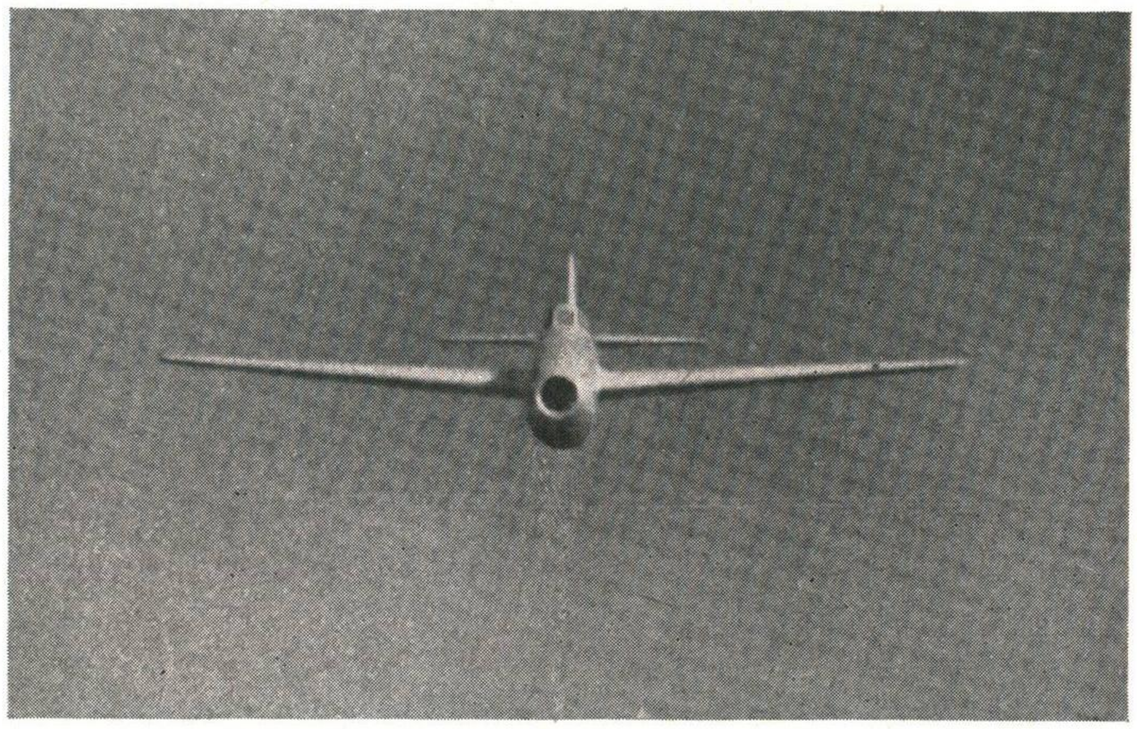
YAKOVLEV'S JET-FIGHTER

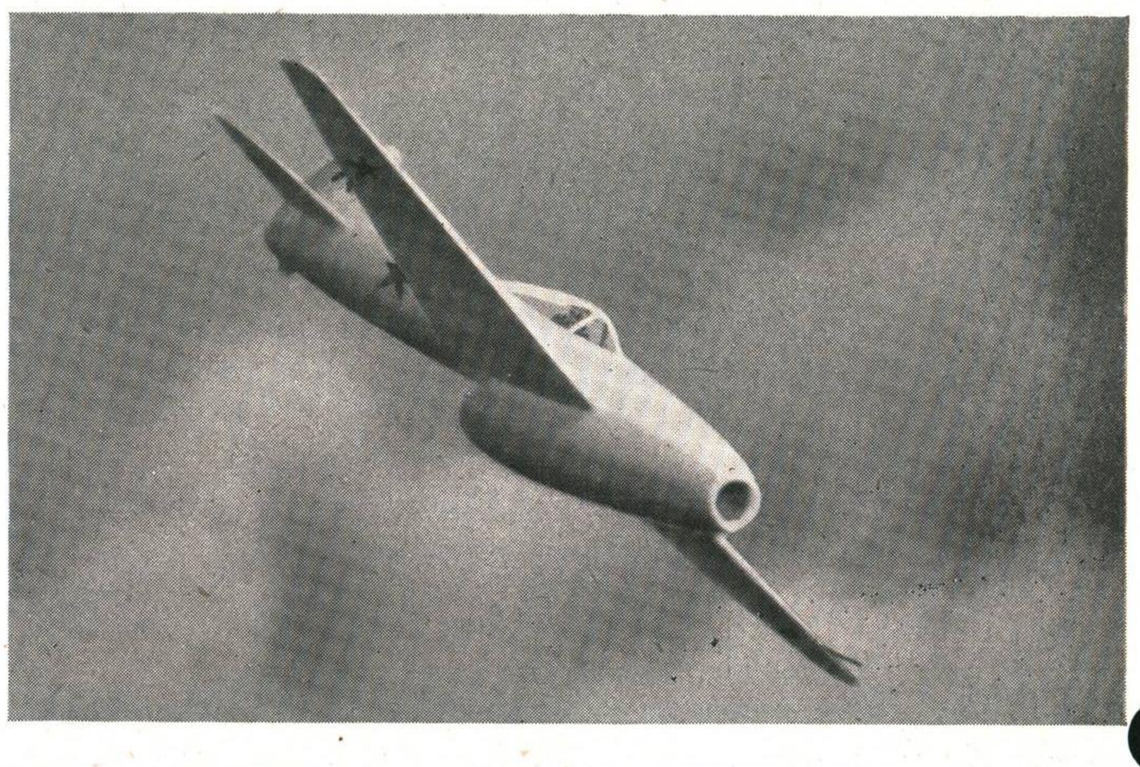
THIS single-seat fighter, thought to be the Yak-15, has all the earmarks of its kin. The shape of its wings and tail-plane and the curious "leaning-forward" fin and rudder closely resemble those of the Yak-3 and the Yak-9 piston-engine fighters ; in fact, on the evidence available so far, it looks very much like a Yak-3 or Yak-9 airframe with a turbojet faired to and beneath the forward end of the fuselage. For all that, it is compact, neat and business-like, and if looks mean anything, it should fly well. No details of its performance or of its turbojet are available at present. Its span should be approximately 32ft. 0ins. (Our sketch, on the left, should not be taken too seriously.)

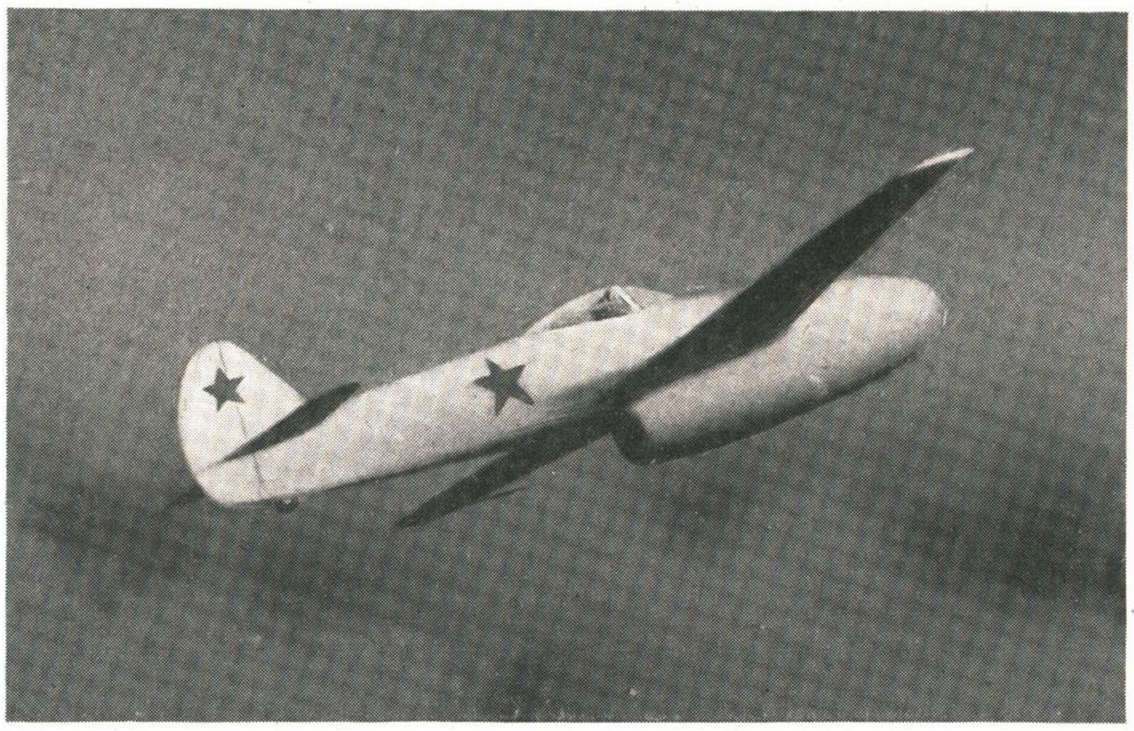


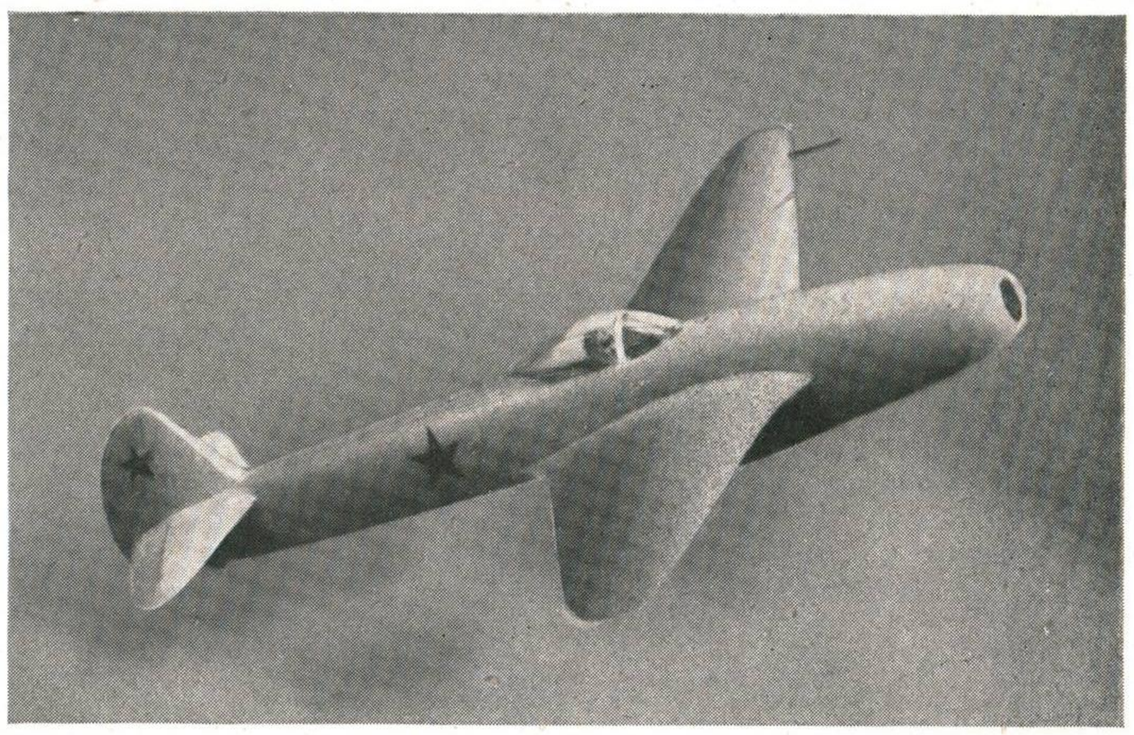
For the use of the accompanying three-view silhouette, we are indebted to Mr. Charles W. Cain, Editor of The Aeroplane Spotter.

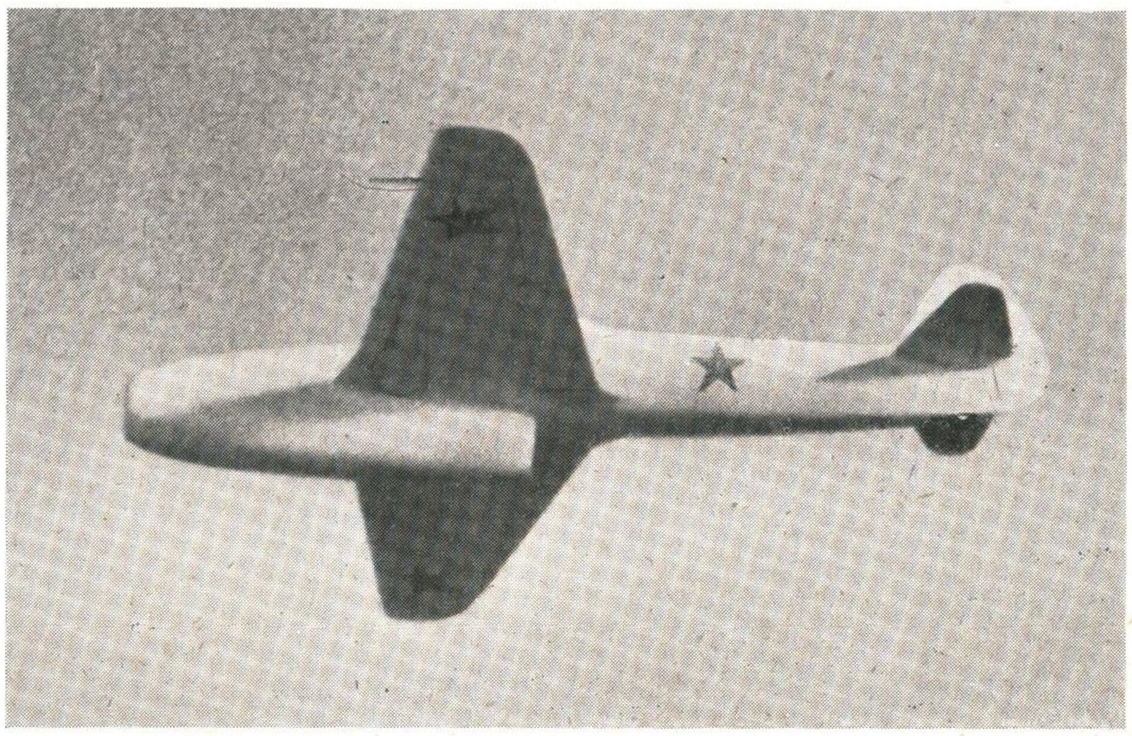


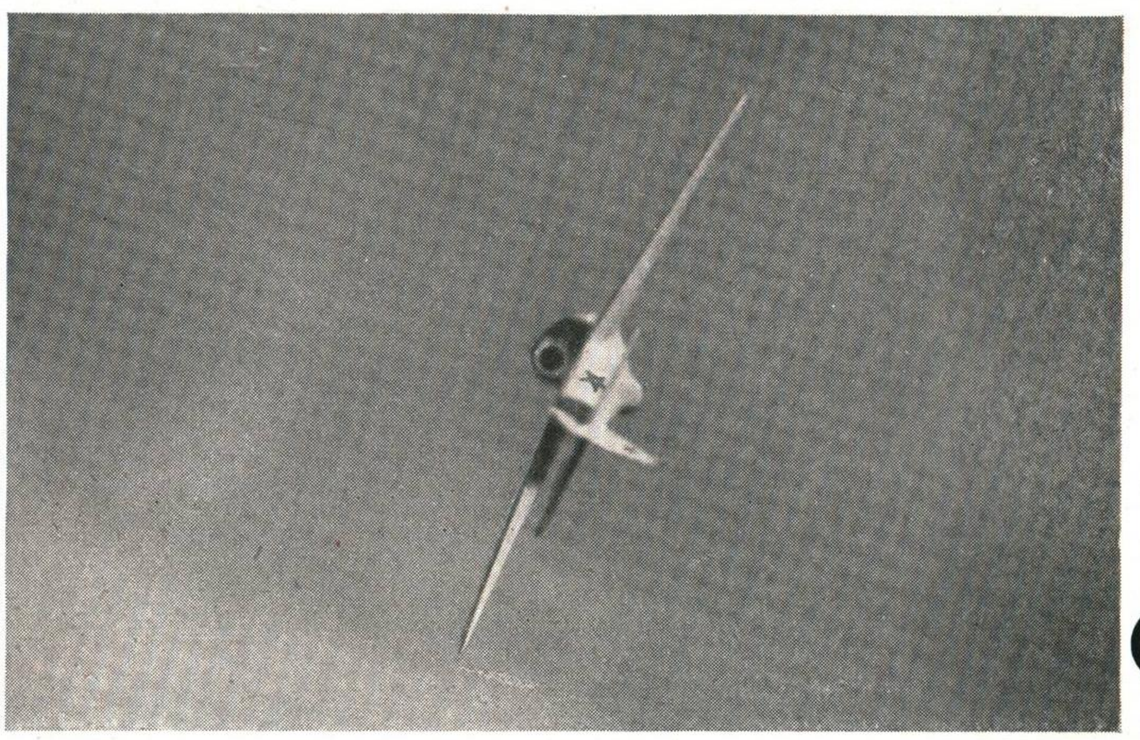












Soviet Twin Engine Bombers

Ilyushin's IL-4

OF the Wellington class and vintage, the IL-4 (formerly the DB-3F and developed from the DB-3) is obsolescent as bombers go. It is an original design by Sergei Ilyushin and can lay claim to some " breeding," for the DB-3 set up many " height-with-load " records in 1936. It is now being gradually replaced by more up-to-date types.

Duties : **Long-range bomber and torpedo-carrier**

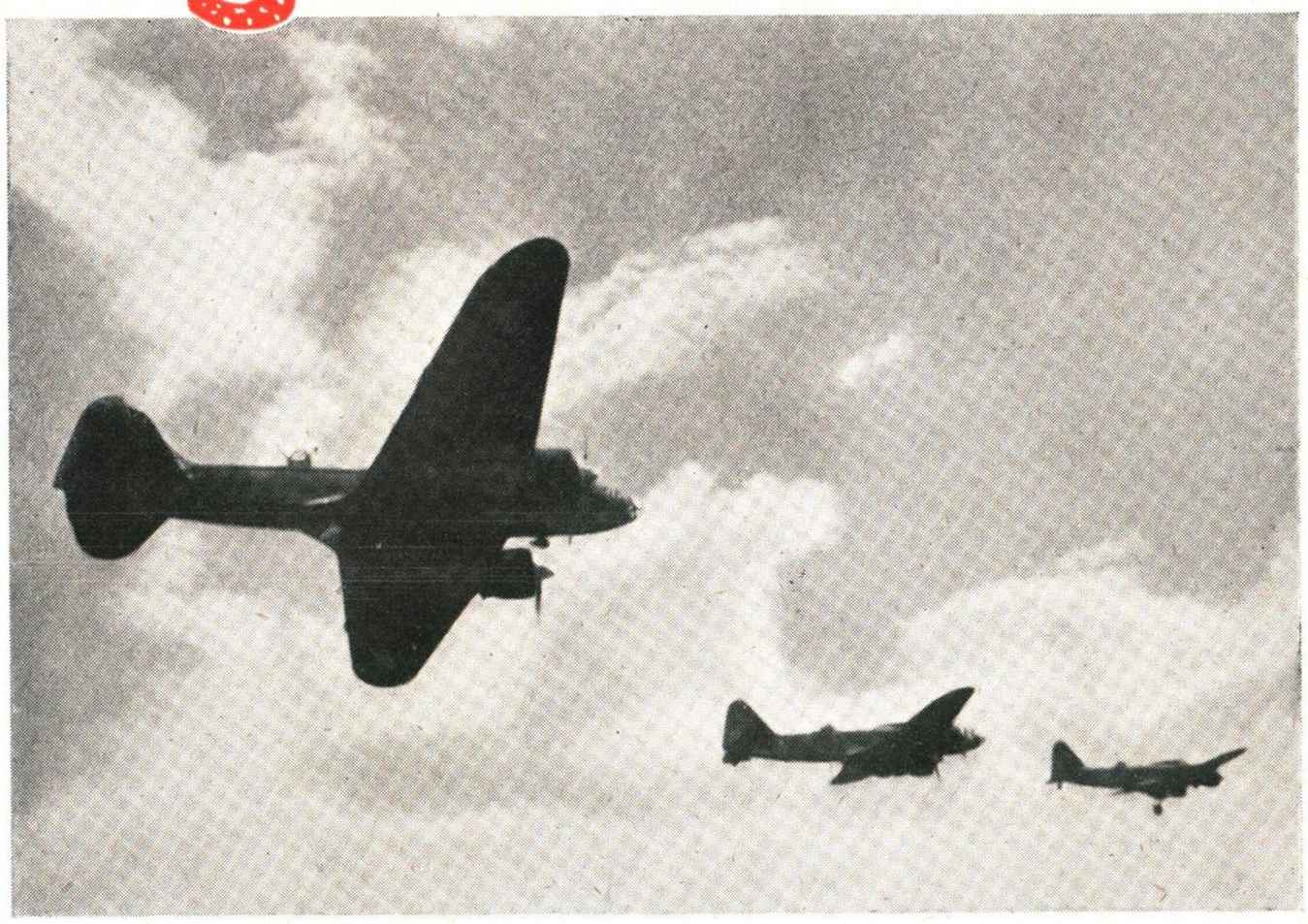
Motors : **Two M-88 radials of 1,100 h.p. each**

Performance : **Max. Speed : 265 m.p.h. Range : 2,500 miles. Ceiling : 30,700 ft.**

Crew : **Three**

Armament : **One 7.6 mm. machine gun in nose ; one in dorsal turret and one in ventral position. Bombload : 4,400 lbs. (partly externally) or one torpedo (externally)**

Span 70 ft. 2 ins. **Length : 47 ft. 6 ins.**



Petlyakov's PE-2

THE PE-2 had considerable operational service during the war at bombing, fighting, reconnaissance, and at ground assault work with the Red Army. It bears more than a superficial resemblance to the late, but not lamented, Messerschmitt Me 110. It is one of the Soviet's fastest piston-engine aircraft in service, and some of its speed can be attributed to its good shapes, but it is expected that the later TU-2 bomber will replace it. The PE-2 is in service with the Russian Air Force and some Russian Satellite air forces.

Duties : **Fighter, bomber, reconnaissance, ground-attack**

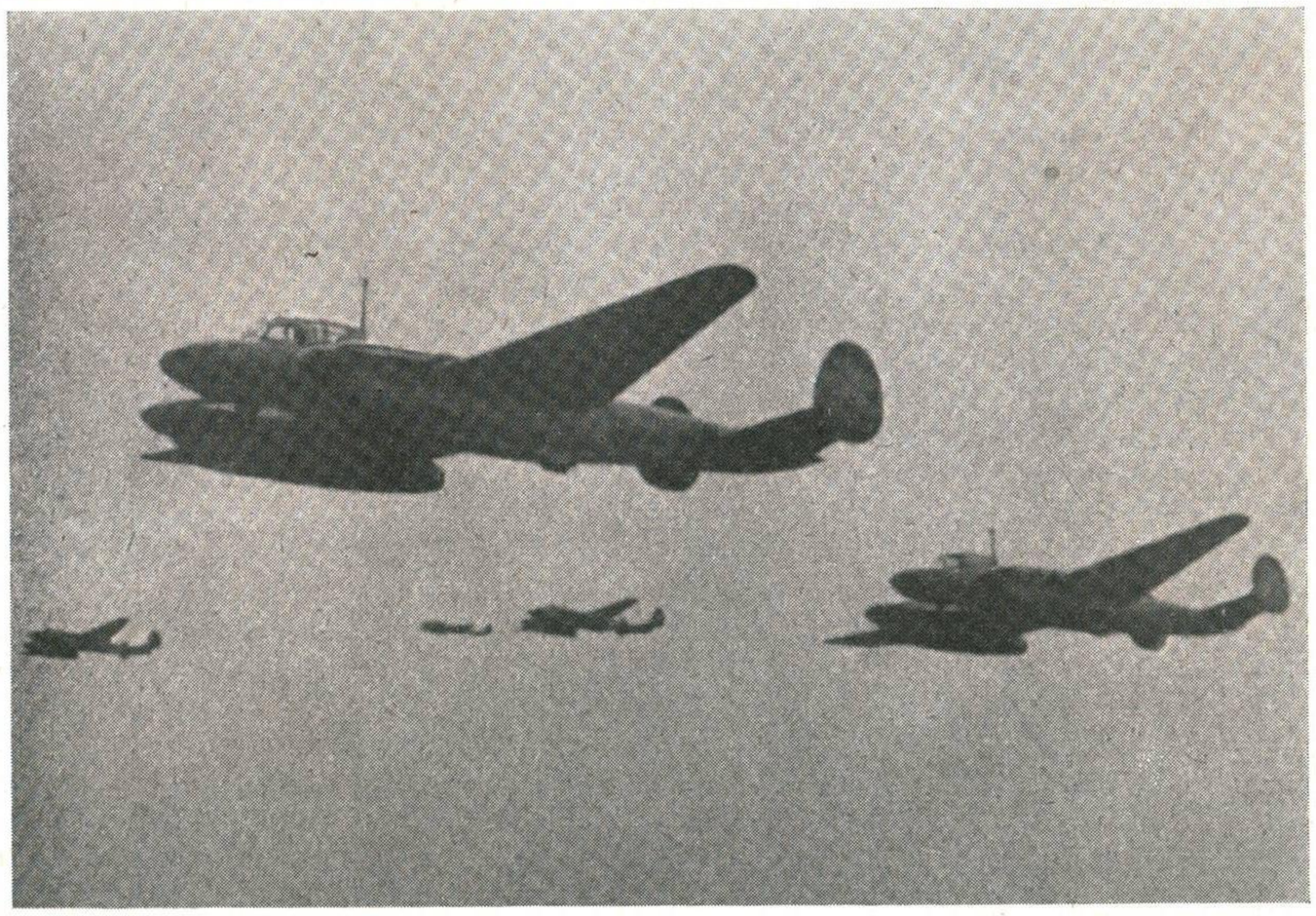
Motors : **Two M-103 in-lines of 1,100 h.p. each**

Performance : **Max. Speed : 340 m.p.h. at 16,400 ft. Range : 1,240 miles. Ceiling : 27,500 ft.**

Crew : **Three or four**

Armament : **Two fixed machine guns in nose (one 7.6 mm., one 12.7 mm.), one 7.6 mm. movable dorsal machine gun ; one 12.7 mm. ventral machine gun ; bomb load : 2,240 lbs.**

Span : 56 ft. 2 ins. **Length : 41 ft. 5 ins.**



Tupolev's TU-2

THE TU-2 is a fast, heavily armed bomber. For Tupolev, its designer, it was a winning design (Stalin presented him with a prize for it in 1943). It is thought to be about the best piston-engine bomber, in its class, that the Russians have produced. It is the only Russian bomber designed during the war and is the standard equipment of the close support Squadrons. It is generally better equipped (for radio and instrumentation) than other Russian bomber types. The TU-2 is probably restricted to service in the Soviet Air Force at present.

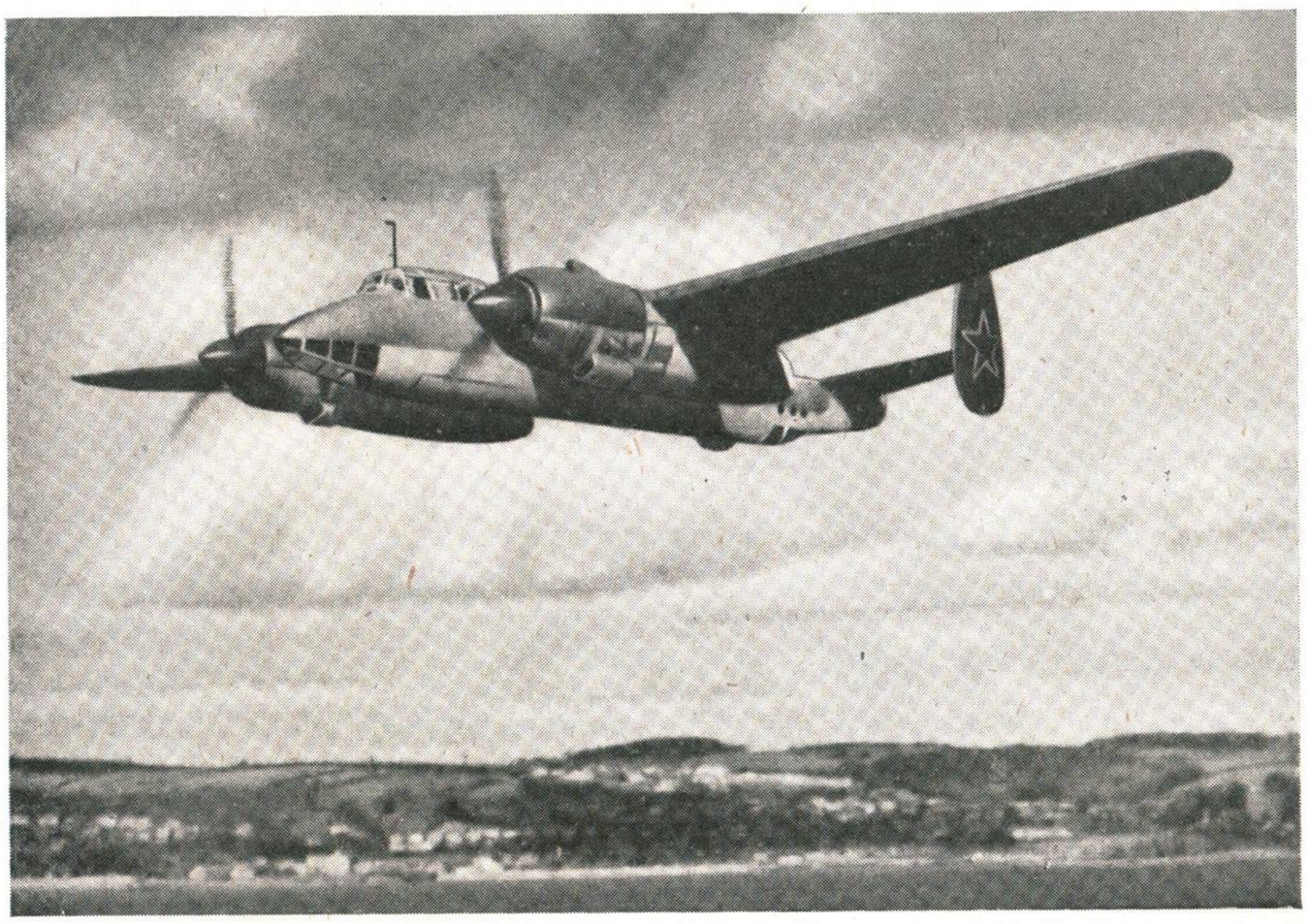
Duty : **Medium assault bomber**

Motors : **Two M-82 FNV radials of 1,600 h.p. each**

Performance : **Max. Speed : 340 m.p.h. Max. Range : 1,000 miles**

Armament : **Two 20 mm. fixed cannon in centre section firing forward ; one 12.7 mm. movable machine gun in rear cabin ; one 12.7 mm. ventral machine gun. Max. Bomb load : 5,000 lbs. (part externally)**

Span : 61 ft. 10 ins. **Length : 45 ft. 3 ins.**



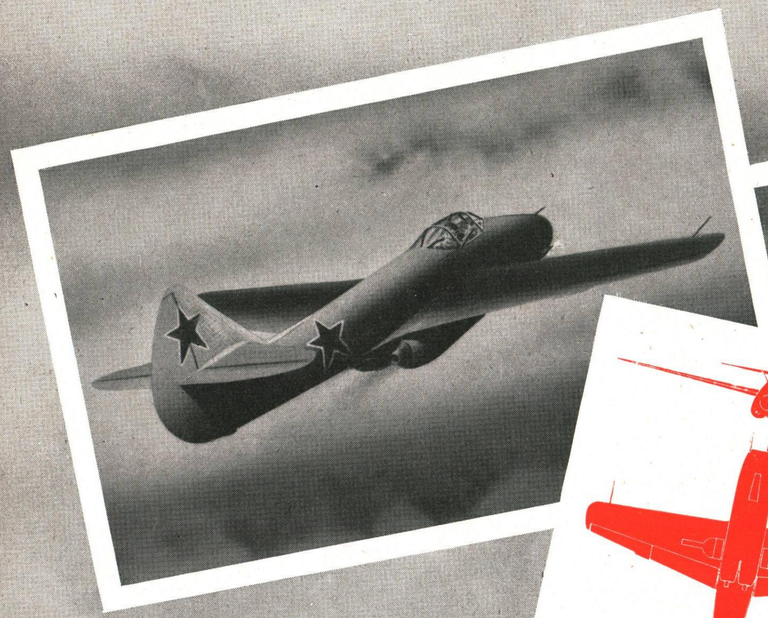
MIG JET

Mikoyan and Gurevitch are the designers responsible for producing this fast Soviet intercepter-fighter which, for the time being, is designated the MIG-Jet. It is probably powered by two German B.M.W. 003 turbojets, each of 1,750 lbs. s.t.

Some of the MIG-Jets' structure shapes bear resemblance to their counterparts on the Messerschmitt Me 262 fighter, particularly in side view, tail-unit configuration, and in fuselage cross section; in fact, if the turbo-jets of the MIG were moved out under the wings the head-on resemblance would be very close. This, however, is not necessarily evidence of German assistance in designing.

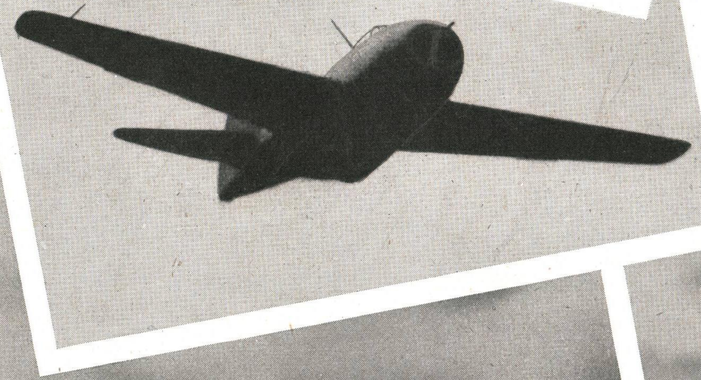
The MIG-Jet is easily recognisable from its unusual layout generally, though one of its most distinguishing features is its "step" in the hull-like fuselage form. As in the case of the YAK-Jet fighter, if looks count for anything, its performance is good.

Span 40 ft. 0 ins. Length 35 ft. 0 ins. Max. Speed in the region of 600 m.p.h.













Soviet Single Engine Fighters





LAVOCHKIN LA-7 and LA-9

Obviously derived from the LA-5, which was designed to meet the Fw 190 menace in 1943, the LA-7 and LA-9 single-seat fighters are a pair of the best-looking Soviet fighter aeroplanes yet produced. The main differences between the two lie in the clipping of the flying surfaces, though there is some reshaping of rear fuselage and fin and rudder of the LA-9. (For detailed differences see silhouettes on the back cover.)

LA-7

Duties : Short-range fighter and fighter-bomber
Engine : One 1,800 h.p. ASH-82 FNV radial
Performance : Max. Speed : About 400 m.p.h. at about 16,000 ft.
Dimensions : Span : 32 ft. 2 ins. Length : 28 ft. 7 ins.
Armament : Two 20 mm. in cowling : Up to 500 lbs. of bombs
Designer : Sergei Lavochkin
In service with Soviet and Soviet Satellite Air Forces.

LA-9

Duties : Short-range fighter and fighter-bomber
Engine : A development of the ASH-82 FNV radial, of about 2,200 h.p.
Performance : Max. Speed : About 400 m.p.h. Range : 750 miles
Dimensions : Span 34 ft. 9 ins. Length : 28 ft. 7 ins.
Armament : Two 20 mm. in cowling : Up to 500 lbs. of bombs
Designer : Sergei Lavochkin
In service with Soviet Air Force

YAKOVLEV YAK-3 and YAK-9

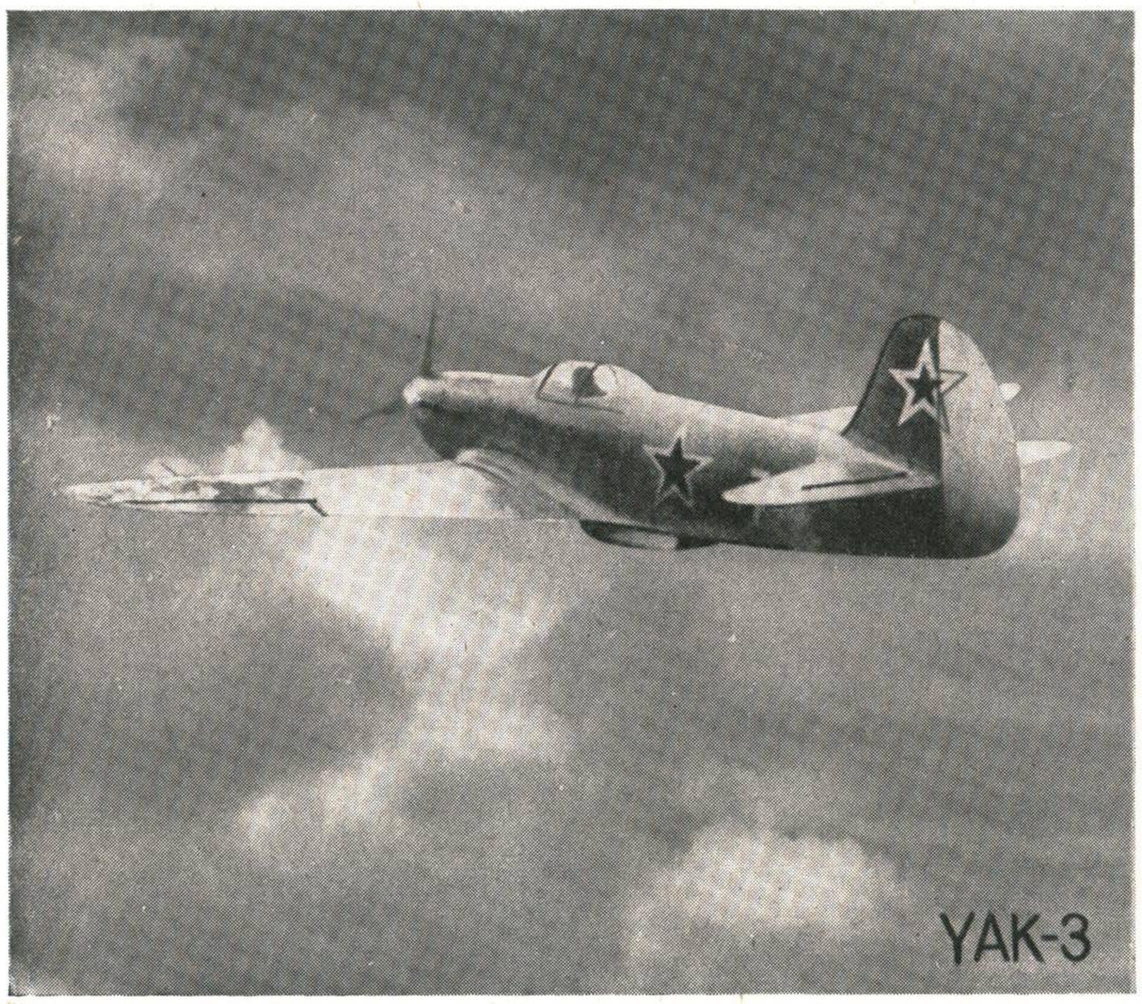
Another pair of Soviet single-seat fighters bearing brotherly, if not comradely, resemblances. The YAK-3 is the newer design. The differences between them are small : the intake beneath the nose of the YAK-9 is replaced by wing-root intakes in the YAK-3 : the YAK-9 sports a radio-mast behind the cockpit : the YAK-9 has an improved cockpit canopy : the wing-tips of the YAK-3 are more pointed than those of the YAK-9 and its wing-span is nearly three feet longer.

YAK-3

Duties : Intercepter-fighter and fighter-bomber
Engine : One 1,310 h.p. VK-105 PF2 in-line liquid-cooled vee
Performance : Max. Speed : 365 m.p.h.
Dimensions : Span : 30 ft. 2 ins. Length 27 ft. 9 ins.
Armament : One 20 mm. cannon firing through spinner. Two 12.7 mm. machine guns in cowling. Light bombs.
Designer : Alexander S. Yakovlev
In service with Soviet and Satellite Air Forces

YAK-9

Duties : Intercepter-fighter
Engine : One 1,800 h.p. VK-107, in-line liquid-cooled vee
Performance : Max. Speed : 370 m.p.h.
Dimensions : Span : 32 ft. 10 ins. Length 27 ft. 11 ins.
Armament : One 20 mm. cannon firing through spinner : one **or** two 12.7 mm. machine guns in engine cowling.
Designer : Alexander S. Yakovlev
In service with Soviet and Satellite Air Forces

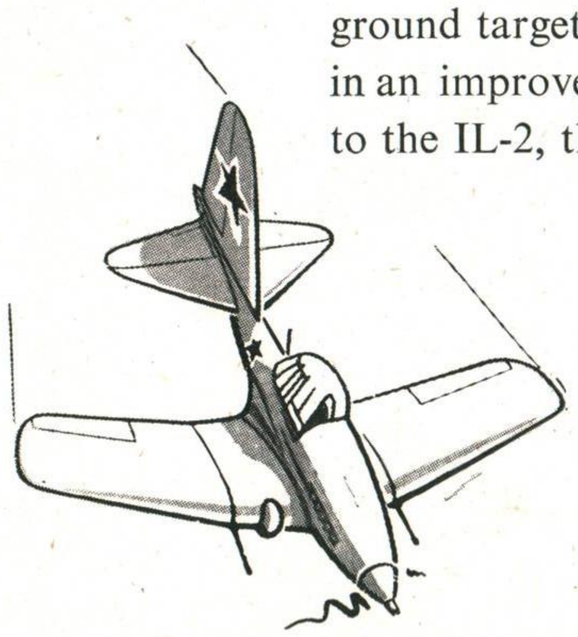


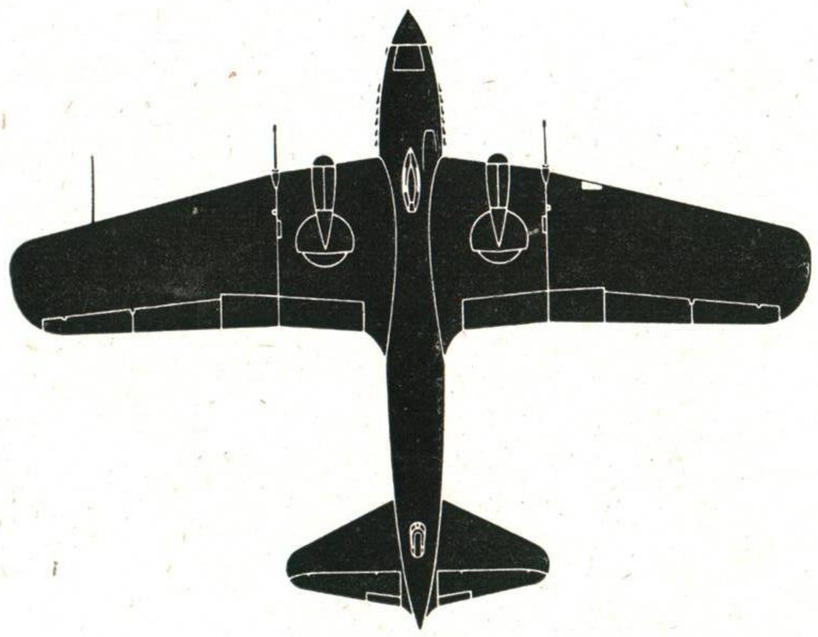


Ilyushin IL-10



SERGEI ILYUSHIN developed the IL-10 from his armour-plated IL-2 Stormovik. Like that famous aeroplane, the IL-10's forte is bombarding ground targets for the Red Army, which it is intended to do in an improved and more efficient manner. Basically similar to the IL-2, the IL-10 is more " cleaned-up," more powerful and has considerably improved performance over the IL-2, which aircraft it is replacing in service.



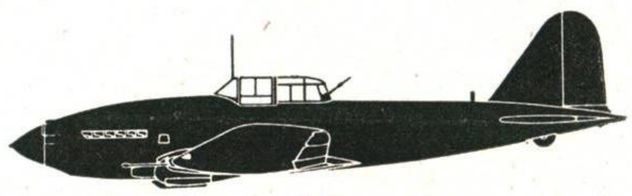


Duties : **Ground-attack and close-support**

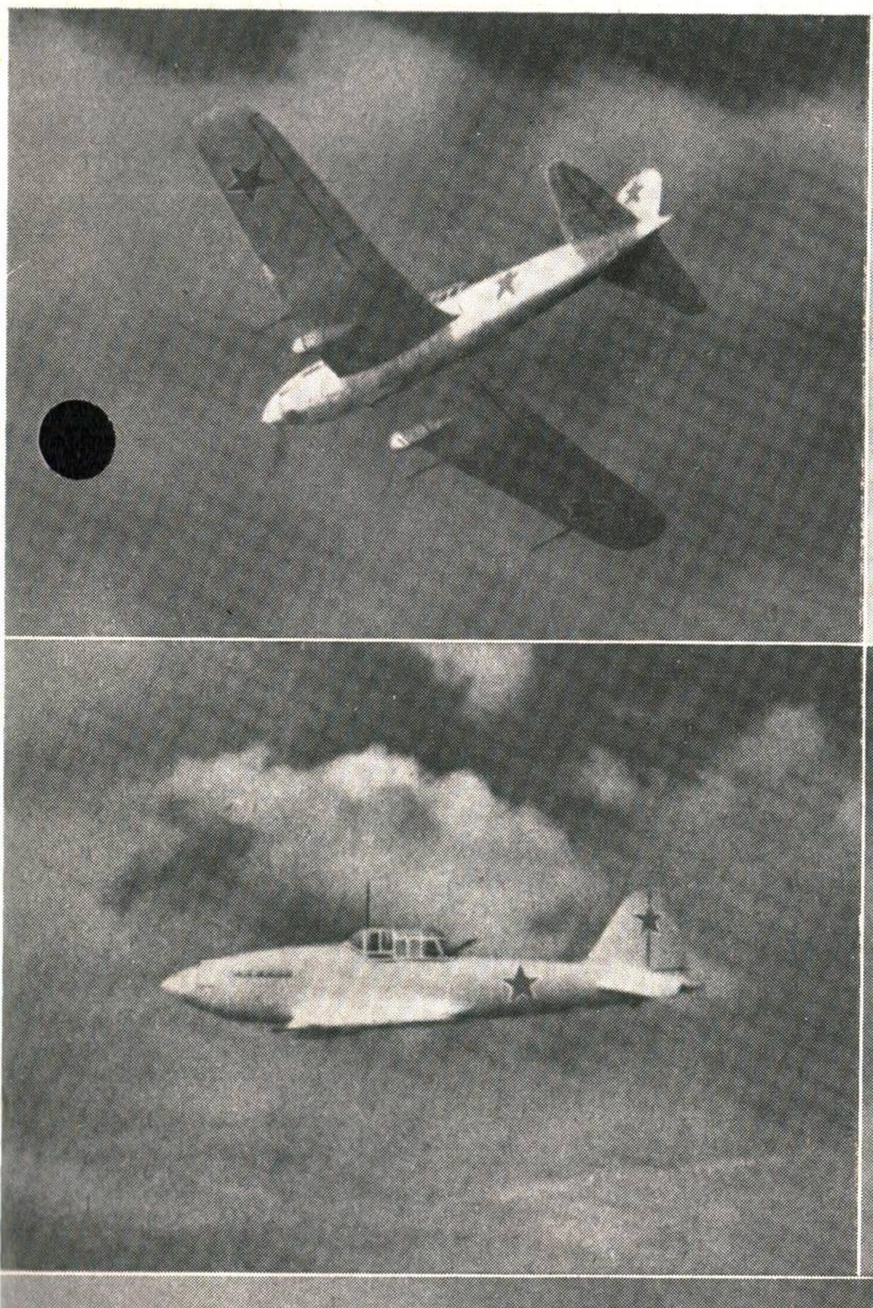
Motor : **One AM-42 in-line vee of 2,000 h.p.**

Performance : **Max. Speed : 280 m.p.h. + at 7,000 ft. Range : ?**

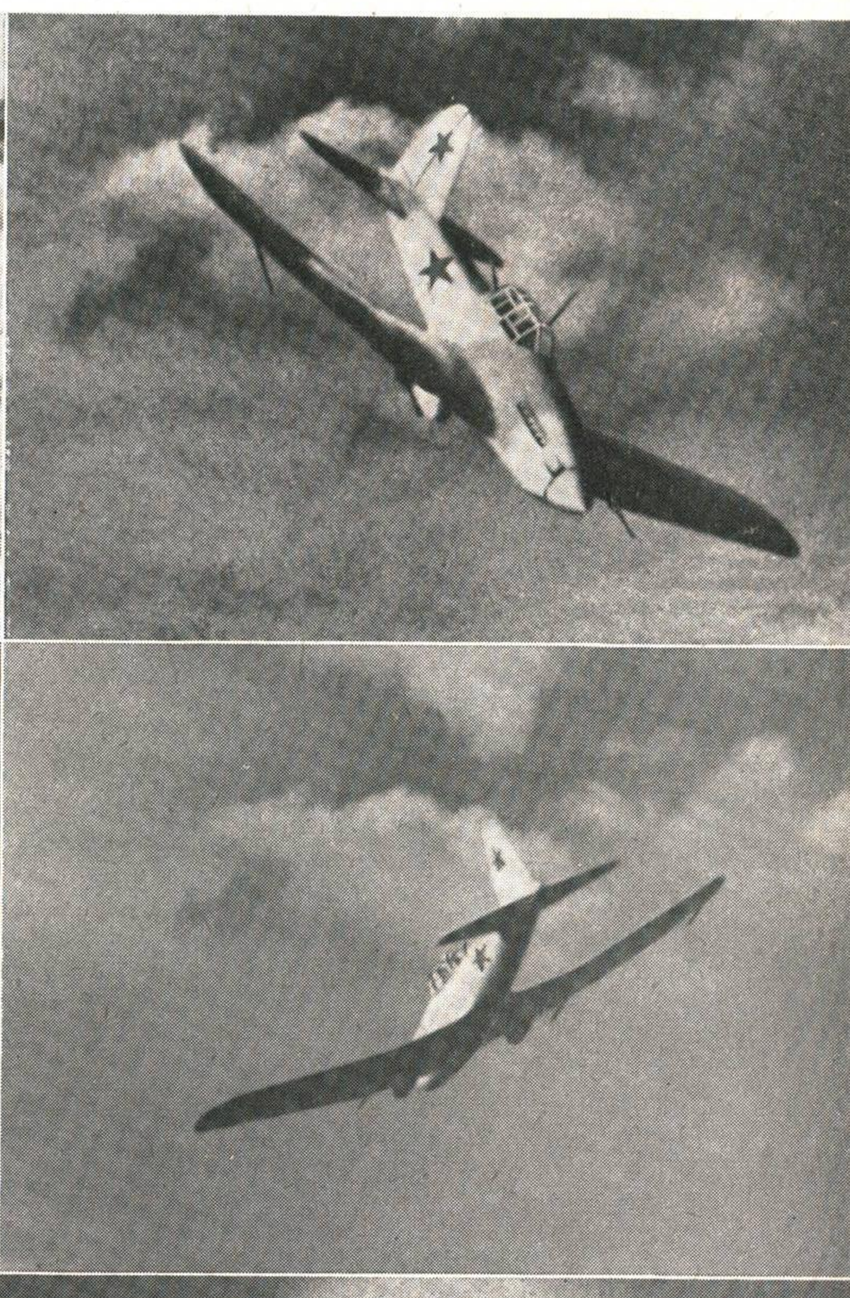
Crew : **Two**

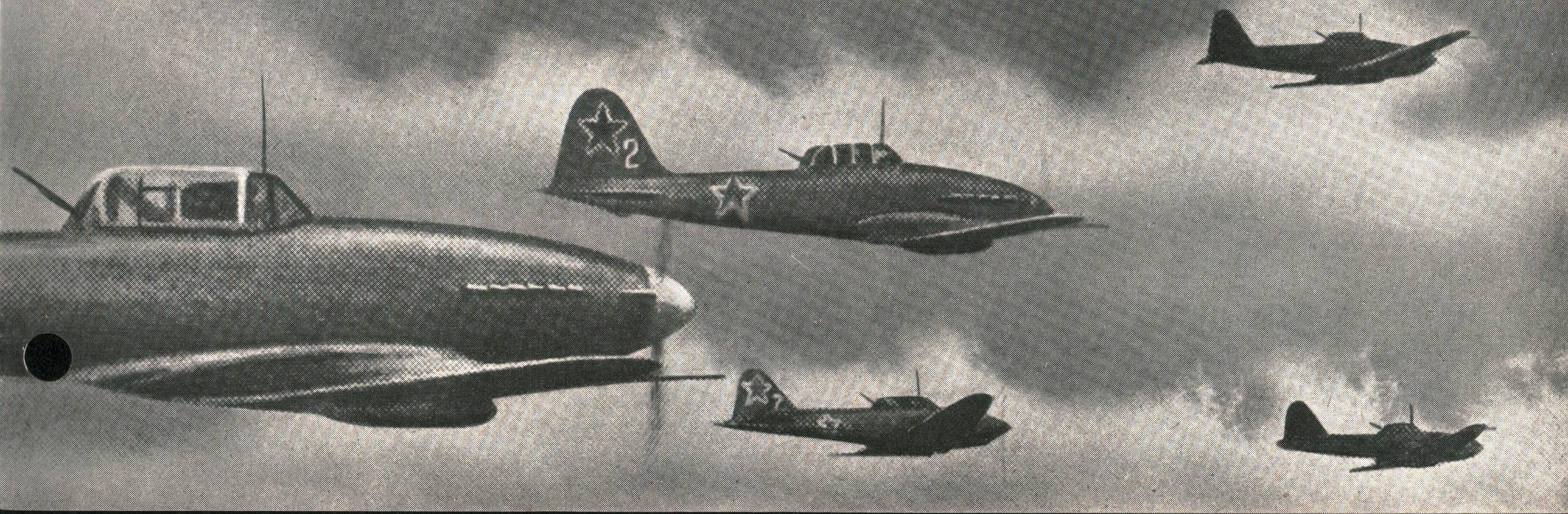


Armament : **Two 23 mm. cannon and two 7.6 mm. machine guns in wings, fixed, firing forward. Alternatively, two 37 mm. cannon for special attacks. Bomb load : four 500 lb. bombs or eight 56 lb. rockets.**



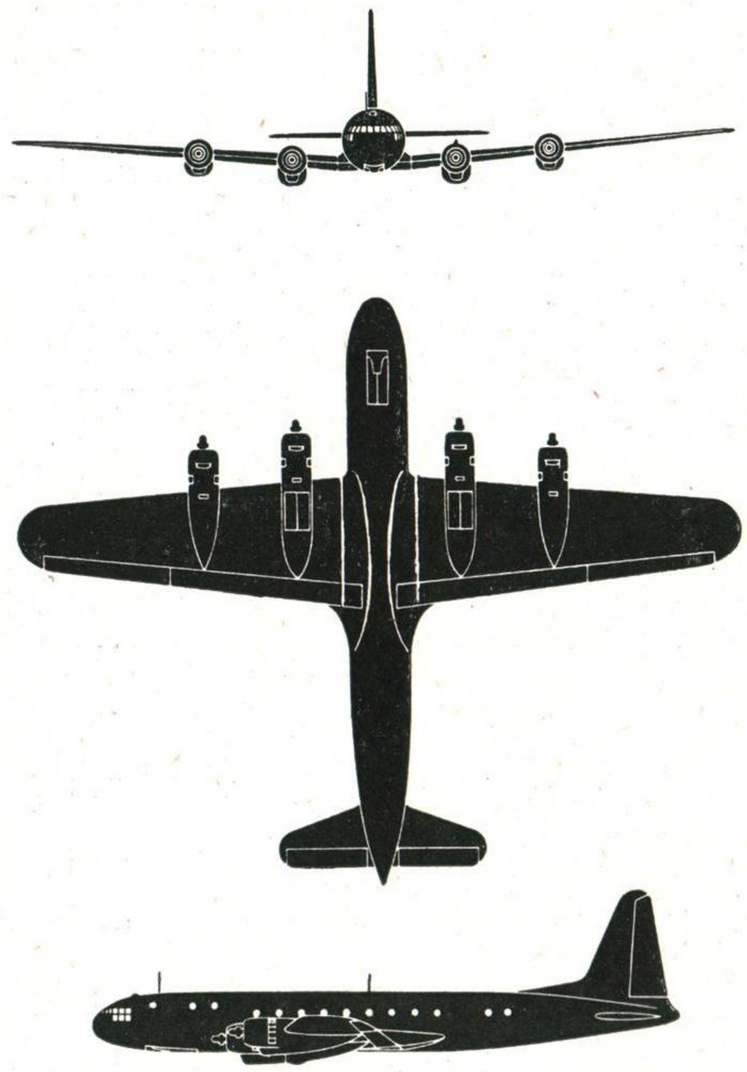












IL-18

Thought to be a scaled-up version of the IL-12, this 66 seat civil transport designed by Sergei Ilyushin is of the Tudor or Hermes/Hastings class, to which aircraft it has certain resemblances. To see the precise differences we recommend comparison of the appropriate three-view silhouettes.

It is probably intended for service on the longer routes of Aeroflot and is thought capable of a range of about 2,500 miles and a top speed of about 300 m.p.h. Its motors are ASH-82 radials of 1,800 h.p. each. Its span is 110 ft. and its length 88 ft.

Its main recognition characteristics are a low-set equi-tapered semi-circular-tipped wing, which has large root fillets ; a tall triangular fin and rudder with a short sloping fin-fairing and a backward tapered tailplane.

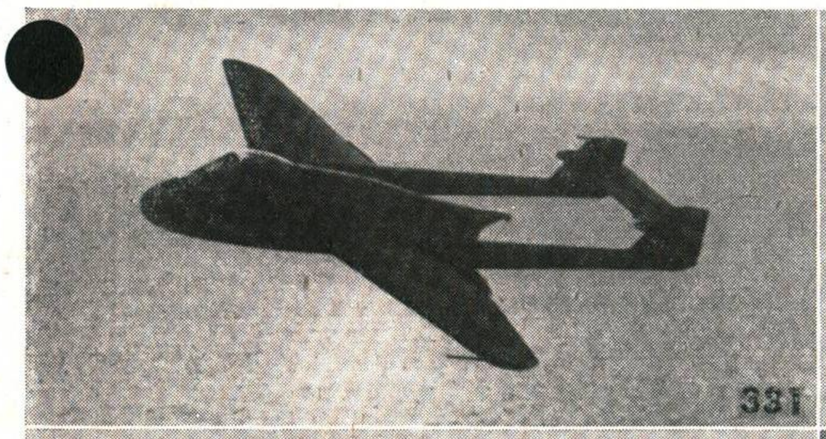
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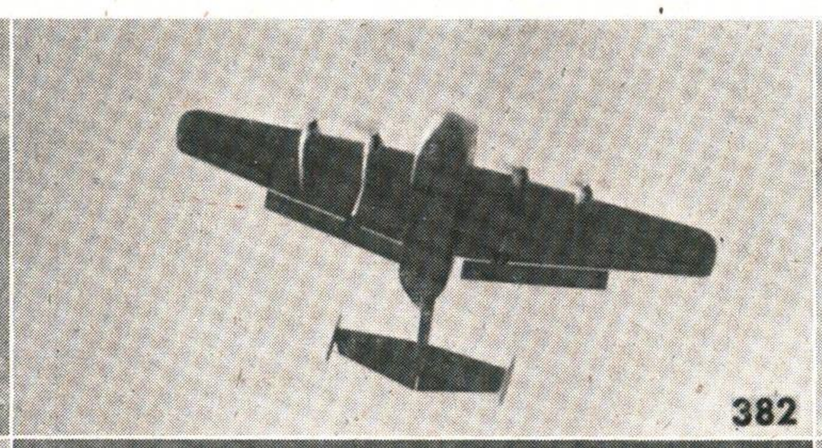
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ELEMENTARY SPOTTING

Recognition Test No. 65

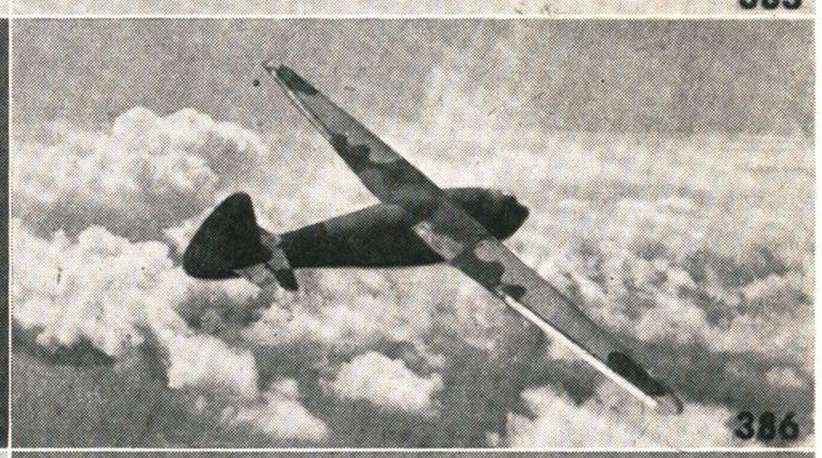

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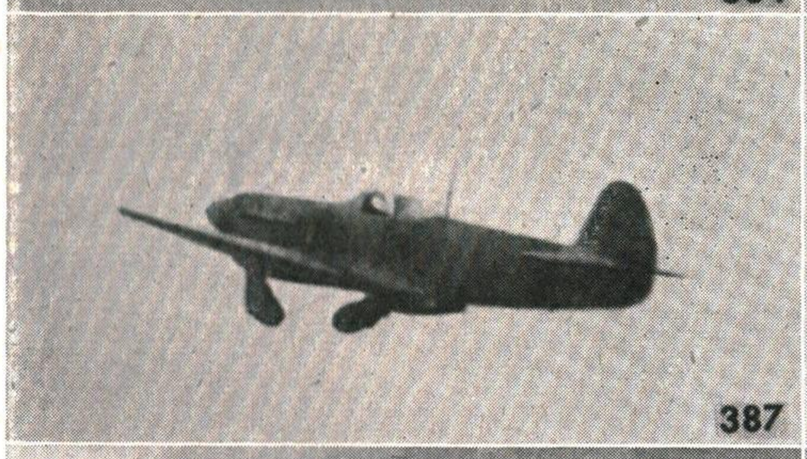

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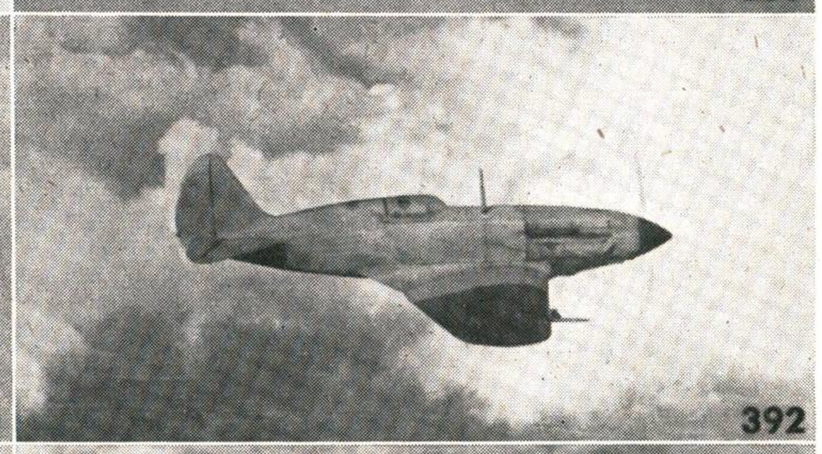

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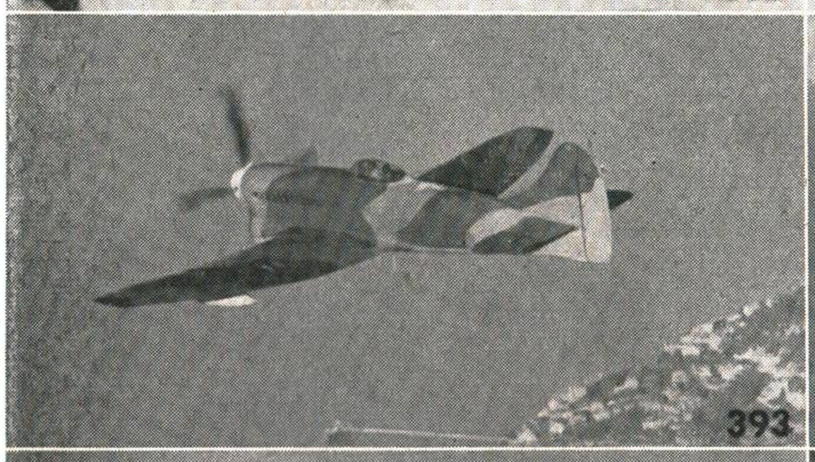

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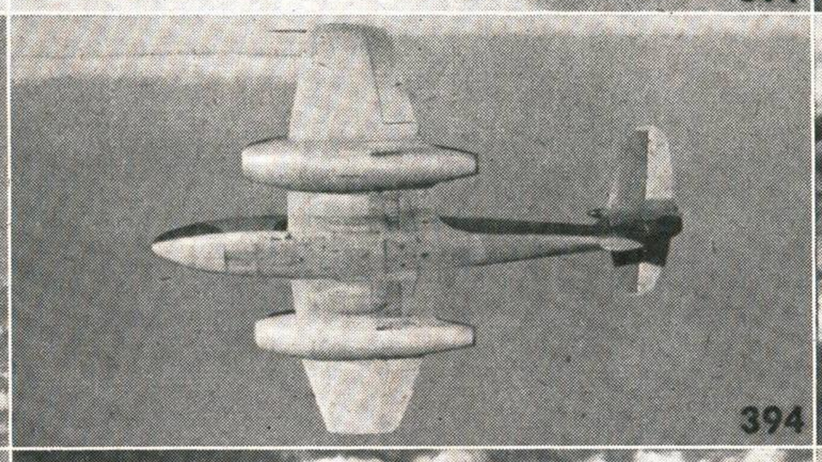

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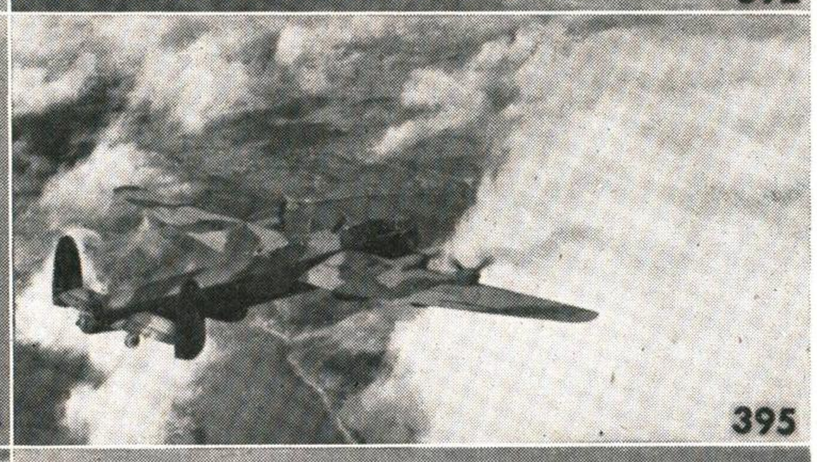

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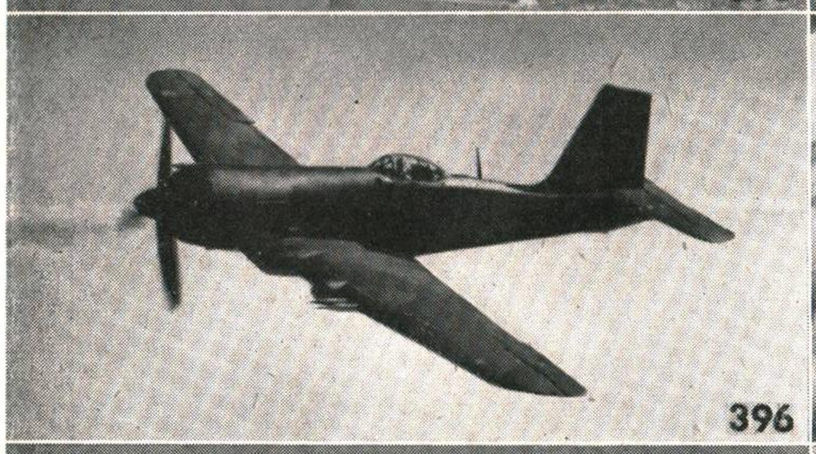

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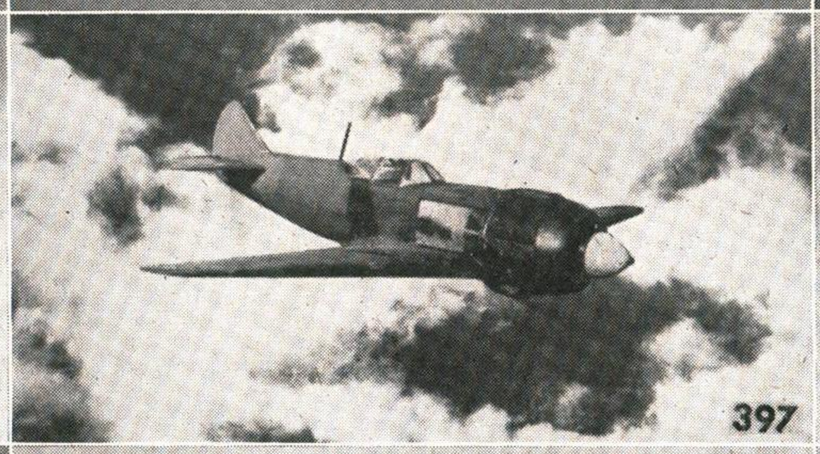

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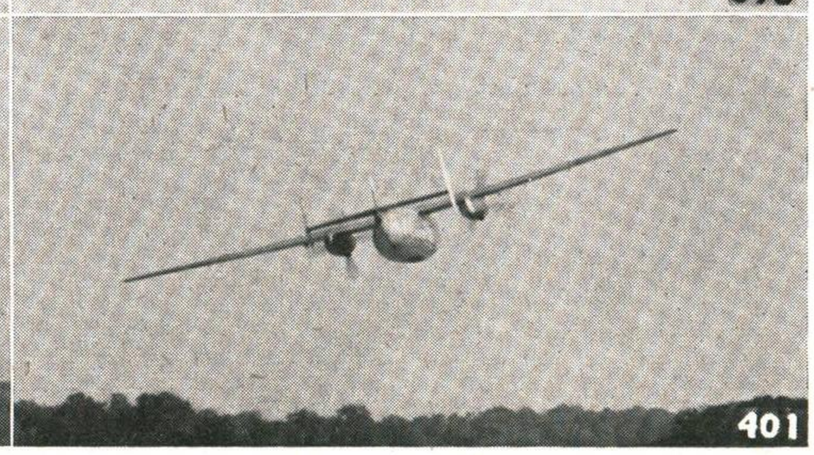

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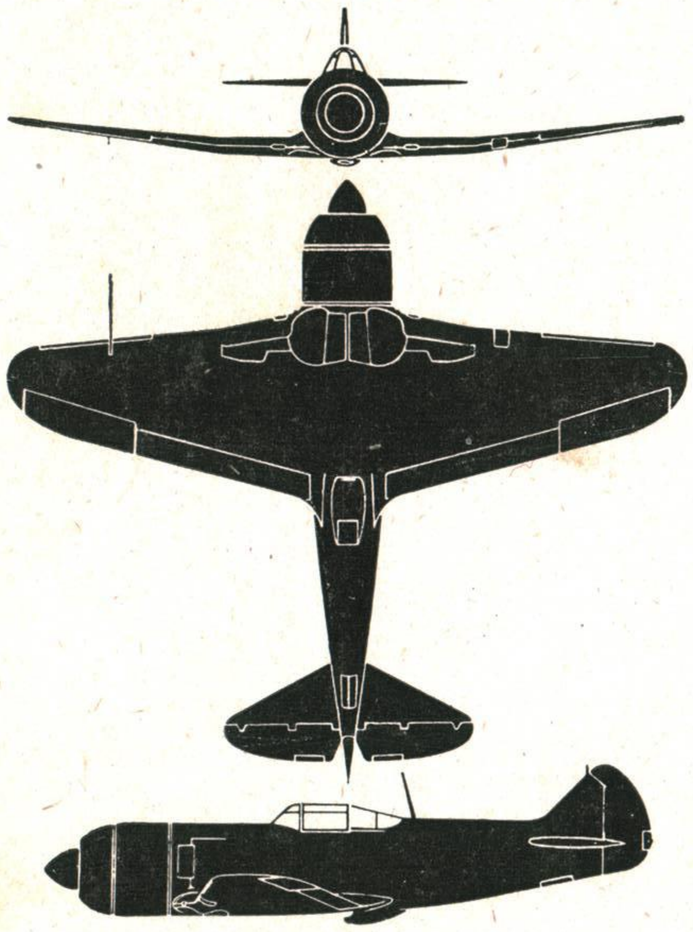

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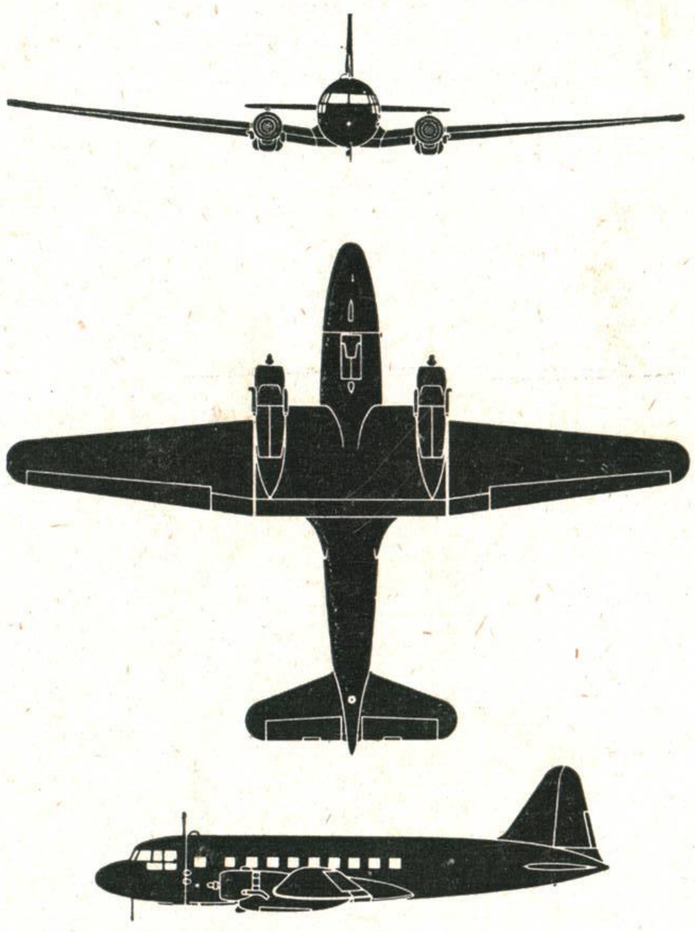
NEW and REVISED SILHOUETTES

LAVOCHKIN LA-7



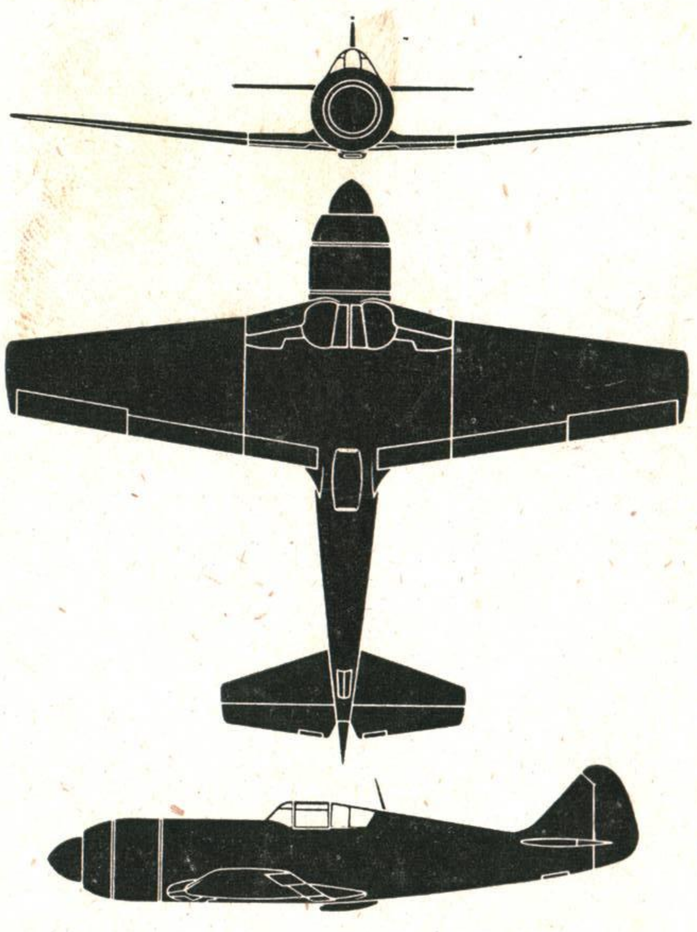
Soviet Fighter
1 ASH-82 FNV radial : Span : 32 ft. 2 ins.
New Silhouette

ILYUSHIN IL-12



Soviet Transport
2 ASH-82 FNV : Span : 100 ft. 0 ins.
Revised Silhouette

LAVOCHKIN LA-9



Soviet Fighter
Span : 34 ft. 9 ins.
Provisional Silhouette

SOLUTIONS TO RECOGNITION TESTS IN THIS ISSUE :

FRONT COVER : *MIG-jET*

No. 64 (ADVANCED)

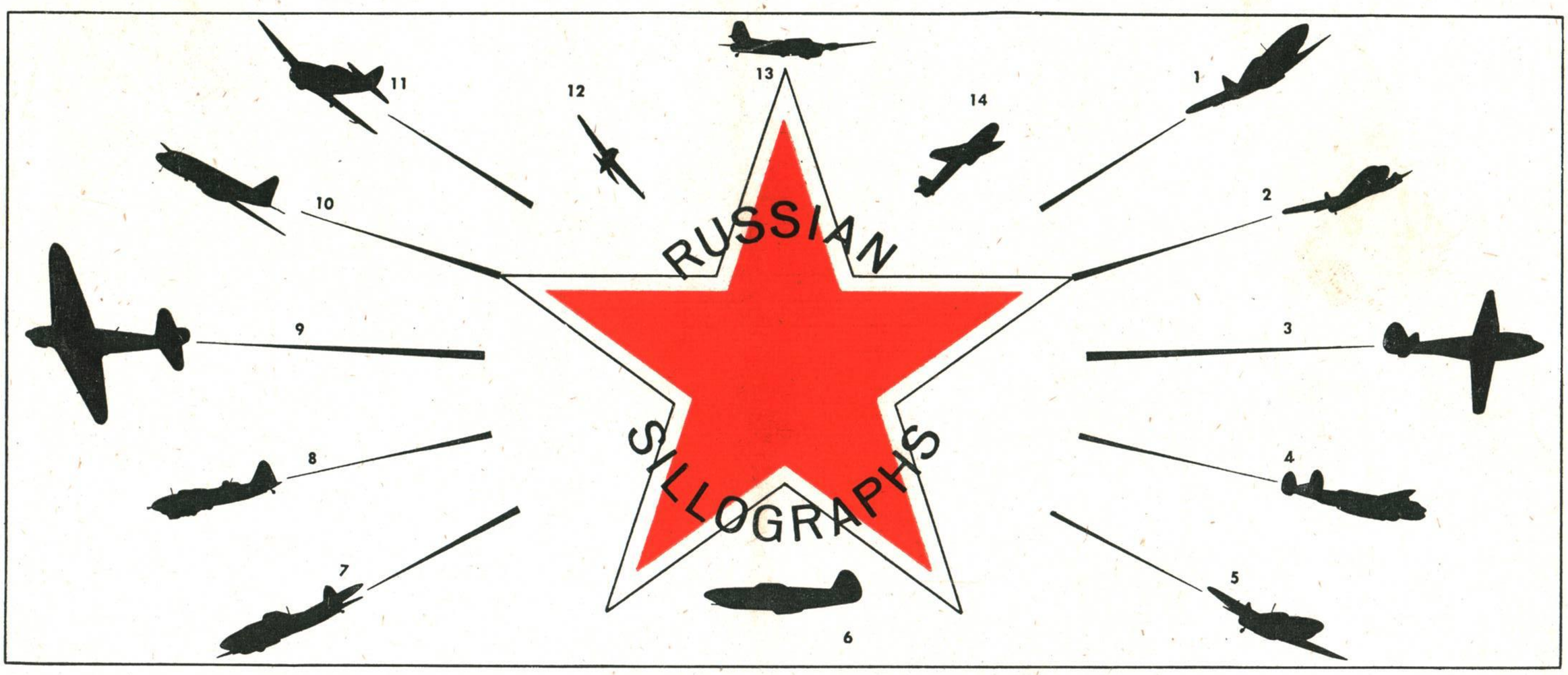
520. Tempest VI
521. A.W.52
522. LAGG-3
523. Freighter
524. Lincoln
525. Omega (Russia)
526. Attacker
527. Tempest VI
528. IL-10
529. Anson XIX
530. Brigand Mk.I
531. Lancastrian
532. PE-8
533. Gemini
534. YAK-7B
535. Seafire 47
536. Sunderland V
537. Oxford
538. P-51H Mustang
539. Tempest VI
540. Hythe
541. Merganser
542. Firefly IV
543. Spitfire Trainer
544. YAK-9

No. 65 (ELEMENTARY)

381. Sea Vampire
382. Miles M-68
383. DH.108
384. Spearfish
385. York
386. A-7
387. YAK-7B
388. Harvard
389. Chipmunk
390. YAK-9
391. Sandringham
392. MIG-3
393. Tempest VI
394. Meteor IV
395. Lincoln
396. Firebrand IV
397. LA-5
398. Dakota
399. Wayfarer
400. Lancaster II
401. Ambassador

RUSSIAN SILLOGRAPHS

1. MIG-3
2. YAK-8
3. A-7
4. TU-2
5. LAGG-3
6. YAK-3
7. IL-2
8. IL-4
9. YAK-7B
10. IL-12
11. LA-5
12. MIG-jet
13. PE-8
14. YAK-jet



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