

# L-13 BLANIK

Blanik is an all-metal production two-seater, widely used in Czechoslovakia and Russia and generally available. Its measured performance, considering its moderate span and relatively roomy fuselage, is very good indeed.

Zweisitziges Ganzmetall-Segelflugzeug in Serienproduktion, das in der Tschechoslowakei und in Rußland eingesetzt und allgemein erhältlich ist. Die erfliegenen Leistungen sind angesichts der geringen Spannweite und des relativ geräumigen Rumpfes sehr gut.

Planeur biplace entièrement en construction métallique, en production de série et employé surtout en Tchécoslovaquie et en Russie; peut être fourni à tous les intéressés. Ses performances mesurées sont excellentes, vu l'envergure modérée et le fuselage relativement spacieux.

Type designation . . . . .	L-13 Blanik
Country of design . . . . .	Czechoslovakia
Designer . . . . .	VZLÚ Lethany
Date of first flight of prototype . . . . .	March 1956
Number produced . . . . .	350

## Wings

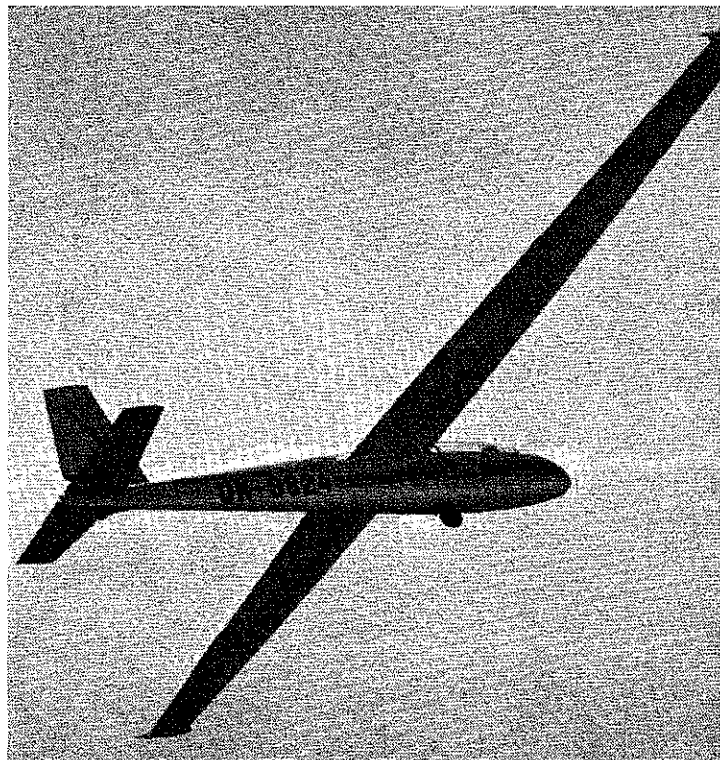
Span (b) . . . . .	16,2 m
Area (s) . . . . .	19,15 m <sup>2</sup>
Aspect ratio (b <sup>2</sup> /s) . . . . .	13,7
Wing root chord (C <sub>r</sub> ) . . . . .	1,665 m
Wing tip chord (C <sub>t</sub> ) . . . . .	0,710 m
Mean chord (C = s/b) . . . . .	1,182 m
Wing section, root . . . . .	NACA 63 <sub>2</sub> A-615
Wing section, tip . . . . .	NACA 63 <sub>2</sub> A-612
Dihedral . . . . .	3°
¼ chord sweep . . . . .	-5°
Aero. twist root/tip . . . . .	3°
Taper ratio (C <sub>t</sub> /C <sub>r</sub> ) . . . . .	0,427
Construction . . . . .	Light alloy. Single spar cantilever. Metal covered

## Ailerons

Type . . . . .	Setback hinge
Span (total) . . . . .	2 × 3,37 m
Area (total) . . . . .	2 × 1,140 m <sup>2</sup>
Mean chord . . . . .	0,338 m
Max. deflection up . . . . .	34°
Max. deflection down . . . . .	13°
Mass balance method . . . . .	Distributed
Construction . . . . .	Metal. Fabric covered

## Horizontal tail

Span . . . . .	3,45 m
Area of elevator and fixed tail (S') . . . . .	2,66 m <sup>2</sup>
Area of elevator . . . . .	1,117 m <sup>2</sup>
Max. deflection up . . . . .	30°
Max. deflection down . . . . .	25°
Aerofoil section . . . . .	Symmetrical
Mass balance method . . . . .	Distributed
Tail arm (from ¼ [1'] chord m. a. c. wing to ¼ chord m. a. c. tail) . . . . .	4,764 m
Elevator trimming method . . . . .	Tab
Horizontal tail volume coefficient (S'1/SC) . . . . .	0,662
Construction . . . . .	All metal tailplane. Metal/fabric covered elevator. Ribs spaced 0,48 m



## Vertical tail

Area of fin and rudder . . . . .	1,605 m <sup>2</sup>
Area of rudder . . . . .	0,904 m <sup>2</sup>
Aspect ratio . . . . .	1,45
Tail arm . . . . .	4,742 m
Max. deflection . . . . .	30°
Aerofoil section . . . . .	Symmetrical
Construction . . . . .	All metal fin. Metal/fabric covered elevator. Ribs spaced 0,32 m

## Fuselage

Max. width . . . . .	0,62 m
Max. height (at cockpit) . . . . .	1,14 m
Overall length . . . . .	8,40 m
Number of seats/arrangement . . . . .	2 tandem.
Undercarriage type . . . . .	Retractable wheel with brake
Construction . . . . .	Metal monocoque. Side opening moulded perspex canopy

## Lift increasing devices

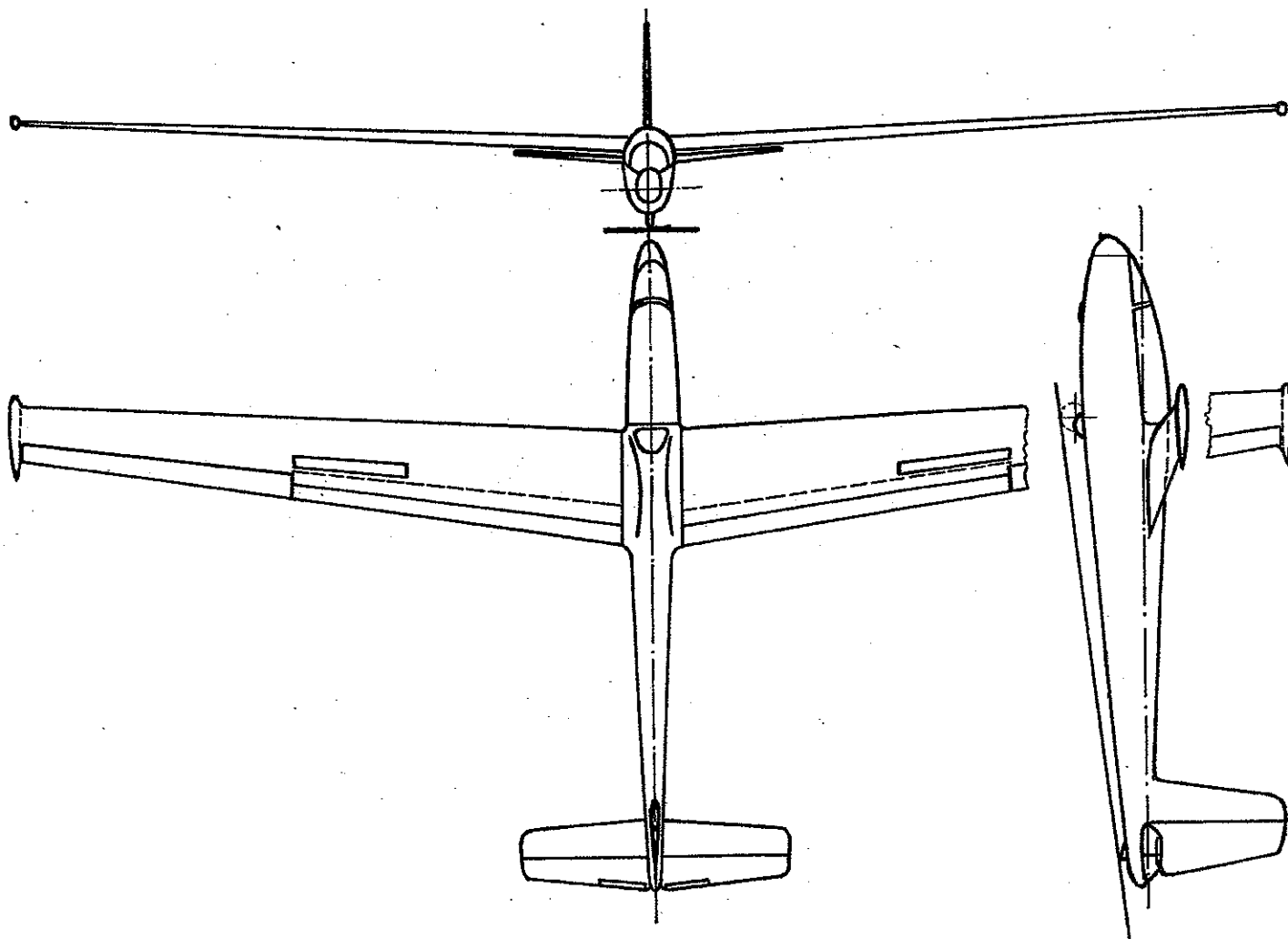
Type . . . . .	Fowler flap
----------------	-------------

## Drag producing devices

Type . . . . .	Upper and lower surface spoilers with gap
Span (total) . . . . .	2 × 1,29 m
Area . . . . .	2 × 0,32 m <sup>2</sup>
Location, % of chord . . . . .	61
Is device intended to limit terminal velocity (vertical dive) to max. permissible I.A.S. . . . .	No

## Weights

Wings (with struts, controls, flaps and brakes) . . . . .	172 kg
---	--------



Fuselage (with fin and rudder, less instruments and equipment) . . . . .	100 kg
Tailplane and elevator . . . . .	14 kg
Empty weight (including any fixed ballast)	286 kg
Instruments . . . . .	6 kg
Other equipment (e.g. oxygen, radio) . . . . .	23 kg
Equipped weight . . . . .	292 kg
Flying weight . . . . .	500 kg
Wing loading . . . . .	26,1 kg/m <sup>2</sup>

**Straight flight performance**

Measured at flying weight of . . . . .	500 kg
--	--------

<b>No flap or brake</b>	V km/h	v sink m/s
Min. sink condition . . . . .	83	0,84
Max. L/D condition . . . . .	93	0,917
	125	1,55
	145	2,24
	165	3,20
Stalling speed . . . . .	62 km/h	56 km/h
Flap deflection . . . . .	0°	10°
Max. L/D . . . . .		28,2

**Design standards**

Airworthiness requirements to which aircraft has been built . . . . .	BVS, BCAR (with max. speed limitation)
Certificate of airworthiness . . . . .	Yes, 1958

**Design flight envelope**

<b>Manoeuvre loads</b>	V km/h	Proof load factor
Point A . . . . .	145	5,0
Point B . . . . .	240	4,3
Point C . . . . .	240	0
Point D . . . . .	136	-2,5
Factor of safety . . . . .		1,5

<b>Gust loads</b>	V km/h	Gust vel. m/s
Point A . . . . .	145	+18
Point B . . . . .	240	+9,2
Point C . . . . .	240	-5,0
Point D . . . . .	136	-16,8

**Limiting flight conditions**

Placard airspeed smooth conditions . . . . .	240 km/h
Placard airspeed gusty conditions . . . . .	145 km/h
Aero-towing speed . . . . .	140 km/h
Winch launching speed . . . . .	100 km/h
Cloud flying permitted? . . . . .	Yes
Permitted aerobatic manoeuvres . . . . .	Aerobatic at 400 kg a.u.w.
Spinning permitted? . . . . .	Yes
Foremost and aftmost c.g. positions for which compliance with regulations has been shown or is intended (% m.a.c.) . . . . .	23 to 38
Terminal velocity with brakes opened at max. all up weight from flight tests (if brakes are speed limiting) . . . . .	258 km/h