

Aero L-39 Albatros

The Aero L-39 Albatros is a high-performance jet [trainer aircraft](#) developed in [Czechoslovakia](#) to meet requirements for a "C-39" (C for *cvičný* - trainer) during the [1960s](#) to replace the [L-29 Delfín](#). It was the first of the second-generation jet trainers, and the first [turbofan](#)-powered trainer produced, and was later updated as the [L-59 Super Albatros](#) and as the L-139 (prototype L-39 with engine [Garrett TFE731](#)). The design is still produced in an evolved state as the [L-159 ALCA](#), while more than 2,800 L-39s still serve with over 30 air forces around the world. The Albatros is versatile, seeing duty in light attack missions as well as basic and advanced pilot training, and is the most widely-used jet trainer in the world.

Design and development

The L-39 first flew on [4 November 1968](#). The L-39 Albatros is a widely flown trainer/light [attack aircraft](#) similar in mission to the Italian [MB339](#). The design is Czechoslovak, though there was significant [Soviet](#) input. The aircraft is in service with various former Soviet allies.

The low, slightly [swept wing](#) has a double-taper planform, 2 1/2-deg [dihedral](#) from the roots, a relatively low [aspect ratio](#), and 26 1/2-gal US (100-liter) [fuel tanks](#) permanently attached to the [wingtips](#). The [trailing edge](#) has double-slotted trailing edge [flaps](#) inboard of mass-balanced [ailerons](#); the flaps are separated from the ailerons by small wing fences.

The tall, swept [vertical tail](#) has an inset [rudder](#). Variable-incidence [horizontal stabilizers](#) with inset elevators are mounted at the base of the rudder and over the exhaust nozzle. Side-by-side [airbrakes](#) are located under the [fuselage](#) ahead of the wing's [leading edge](#). Flaps, landing gear, wheel brakes and air brakes are powered by a hydraulic system. Controls are pushrod-actuated and have

electrically powered servo tabs on the ailerons and rudder. Operational [g-force](#) limits at 9,259 lb (4,200 kg) are +8/-4 g.

A single [turbofan engine](#) is embedded in the fuselage and is fed through shoulder-mounted, semi-circular air intakes (fitted with splitter plates) just behind the cockpit; the engine exhausts below the tailplane. Five rubber bag fuel tanks are located in the fuselage behind the cockpit. The main, trailing-arm landing gear legs retract inward into wing bays; the nose gear retracts forward.

A long, pointed nose made of fiberglass leads back to the tandem cockpit, in which the student and instructor sit under individual canopies that are hinged on the right. The rear (instructor's) seat is raised slightly; both [ejection seats](#) are made by Aero.

The basic trainer is not armed, but has two underwing pylons for drop tanks and practice weapons. Light-attack variants have four underwing hardpoints for ground attack stores; the ZA also has an underfuselage [gun pod](#).

This model is no longer in production and is replaced by the L-159.