

L-29 Delfin



Aero L-29 Delfín

Role	Military trainer aircraft Light attack
Manufacturer	Aero Vodochody
Designer	Ing. Jan Vlček, Z. Rublič and K. Tomáš
First flight	5 April 1959
Introduction	1961
Status	At least a few in service with the Mali Air Force; popular civilian war bird
Primary users	Soviet Air Force Bulgarian Air Force
Produced	1963-1974
Number built	3,500

The **Aero L-29 Delfin** (English: Dolphin, NATO reporting name: **Maya**) is a military jet trainer aircraft that became the standard jet trainer for the air forces of Warsaw Pact nations in the 1960s. It was Czechoslovakia's first locally designed and built jet aircraft.

Design and Development

In the late 1950s, the Soviet Air Force was seeking a jet-powered replacement for its fleet of piston-engined trainers, and this requirement was soon broadened to finding a trainer aircraft that could be adopted in common by Eastern Bloc air forces. Aero's response, the prototype **XL-29** designed by Z. Rublič and K. Tomáš first flew on 5 April 1959, powered by a British Bristol Siddeley Viper engine. The second prototype was powered by the Czech-designed M701 engine, which was used in all subsequent aircraft.

The basic design concept was to produce a straightforward, easy-to-build and operate aircraft. Simplicity and ruggedness were stressed with manual flight controls, large flaps and the incorporation of perforated airbrakes on the fuselage sides providing stable and docile flight characteristics, leading to an enviable safety record for the type. The sturdy L-29 was able to operate from grass, sand or unprepared fields. Both student pilot and instructor had ejection seats, and were positioned in tandem, under separate canopies with a slightly raised instructor position.

In 1961, the L-29 was evaluated against the PZL TS-11 Iskra and Yakovlev Yak-30 and emerged the winner. Poland chose to pursue the development of the TS-11 Iskra anyway, but all other Warsaw Pact countries adopted the Delfin under the agreements of COMECON.

Production began April 1963 and continued for 11 years, with 3,600 eventually built until 1974. A dedicated, single-seat, aerobatic version was developed as the **L-29A Akrobat**. A reconnaissance version with nose-mounted cameras was built as the **L-29R**.

Operational History

The Delfin served in basic, intermediate and weapons training roles. For this latter mission, they were equipped with hardpoints to carry gun pods, bombs or rockets, and thus armed, Egyptian L-29s were sent into combat against Israeli tanks during the Yom Kippur War. The L-29 was supplanted in the inventory of many of its operators by the Aero L-39 Albatross. More than 2,000 L-29s were supplied to the Soviet Air Force, acquiring the NATO reporting name "Maya."

L-29's, along with the newer L-39, were used extensively in ground attack missions in the Nagorno-Karabakh War by Azeri forces. At least 14 were shot down by Armenian air-defenses, out of the total inventory of 18 L-29's. The Azeri Air Force lost large amounts of its air force due to anti-aircraft fire.



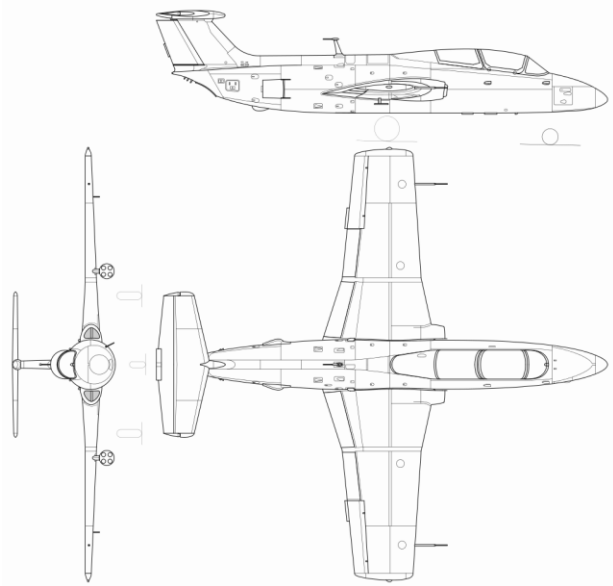
Georgian Air Force Aero L-29

As a trainer, the L-29 enabled air forces to adopt an "all-through" training on jet aircraft, replacing earlier piston-engine types. On July 16, 1975, a Czechoslovak Air Force L-29 shot down a Polish civilian biplane piloted by Dionizy Bielański that was attempting to defect to the West.

On October 2, 2007, an unmodified L-29 was used for the world's first jet flight powered solely by 100% biodiesel fuel. Pilots Carol Sugars and Douglas Rodante flew their Delphin Jet from Stead Airport, Reno, Nevada to Leesburg International Airport, Leesburg, Florida in order to promote environmentally friendly fuels in aviation.

From September 10 to September 14, 2008, two L-29s took first and second place at the Reno Air Races. Both L-29s consistently posted laps at or above 500 miles per hour. Former Astronaut Curt Brown took first place in "Viper," followed by Red Bull racer Mike Mangold in "Euroburner."

Russia says it destroyed two Georgian L-29s during the 2008 South Ossetia war.



Specifications L-29

General characteristics

- **Crew:** 2: student and instructor
- **Length:** 10.81 m (35 ft. 5½ in)
- **Wingspan:** 10.29 m (33 ft. 9 in)
- **Height:** 3.13 m (10 ft. 3 in)
- **Wing area:** 19.8 m² (213 ft²)
- **Empty weight:** 2,280 kg (5,027 lb.)
- **Loaded weight:** 3,280 kg (7,231 lb.)
- **Max. takeoff weight:** 3,540 kg (7,804 lb.)
- **Powerplant:** 1 × Motorlet M-701C 500 turbojet, 8.7 kN (1,960 lbf)

Performance

- **Never exceed speed:** 820 km/h (442 knots, 510 mph)
- **Maximum speed:** 655 km/h (353 knots, 407 mph) at 5,000 m (16,400 ft.)
- **Stall speed:** 130 km/h (71 knots, 81 mph) flaps down
- **Range:** 894 km (480 nmi, 555 mi) with tip tanks
- **Endurance:** 2 hours 30 min
- **Service ceiling:** 11,000 m (36,100 ft.)
- **Rate of climb:** 14.0 m/s (2,755 ft./min)

Armament

- 200 kg (440 lb.) of various guns, bombs, rockets, and missiles on external hardpoints.