

T-50 Project



1 Airplane

1.1 Korean T-50 Light weight trainer Black Eagles

The KAI T-50 Golden Eagle is a family of South Korean supersonic advanced trainers and multirole light fighters, developed by the consortium that established by Korea Aerospace Industries (KAI) along with the American aerospace company Lockheed Martin. The T-50 is South Korea's first indigenous supersonic aircraft and one of the world's few supersonic trainers.

Development began in the late 1990s, and its maiden flight occurred in 2002. The aircraft entered active service with the Republic of Korea Air Force (ROKAF) in 2005. The T-50 has been further developed into aerobatic and combat variants, namely T-50B, TA-50, and FA-50. The F-50 is another advanced fighter variant being considered. The T-50B serves with the South Korean air force's aerobatics team (Black Eagles).

The TA-50 light attack variant has been ordered by Indonesia. The Philippines ordered 12 units of the FA-50 variant. The T-50 is also being marketed as a candidate for the United States Air Force's next-generation T-X trainer programme. The T-50 Golden Eagle design is largely derived from the F-16 Fighting Falcon, and they have many similarities: use of a single engine, speed, size, cost, and the range of weapons.

KAI's previous engineering experience in license-producing the KF-16 was a starting point for the development of the T-50. The trainer has seating for two pilots in a tandem arrangement. The high-mounted canopy developed by Hankuk Fiber is applied with stretched acrylic, providing the pilots with good visibility, and has been tested to offer the canopy with ballistic protection against 4-lb objects impacting at 400 knots. The altitude limit is 14,600 metres (48,000 ft), and airframe is designed to last 8,000 hours of service. There are seven

internal fuel tanks with capacity of 2,655 litres (701 US gal), five in the fuselage and two in the wings. An additional 1,710 litres (452 US gal) of fuel can be carried in the three external fuel tanks.

T-50 trainer variants have a paint scheme of white and red, and aerobatic variants white, black, and yellow. The T-50 uses a single General Electric F404-102 turbofan engine license-produced by Samsung Techwin, upgraded with a FADEC system jointly developed by General Electric and KAI. The engine consists of three-staged fans, seven axial stage arrangement, and an afterburner. The aircraft has a maximum speed of Mach 1.5. Its engine produces a maximum of 78.7 kN (17,700 lbf) of thrust with afterburner. The more powerful F414 and EJ200 engines have been suggested as the new engine for the T-50 family.

1.2 Model R/C plane T-50

1.2.1 Airplane controls

The model plane is providing the following control inputs to control the aircraft movement

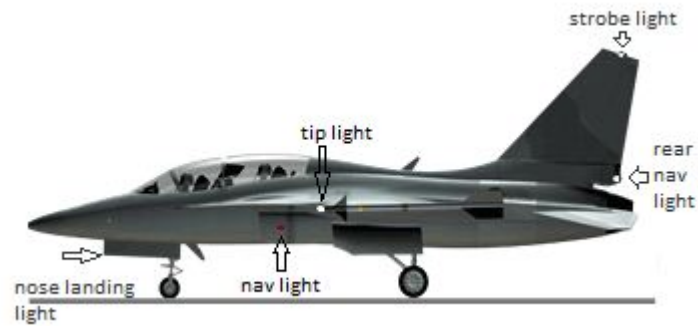
- motor control
- ailerons (are used as flaps during takeoff and landing)
- elevator (two servos, optionally as tailerons configurable)
- rudder
- retractable landing gear

1.2.2 Light system

The model airplane is delivered without any light system installed. The original T-50 Black Eagle aircraft is equipped with the following lights

- strobe light (top of rudder) - clear white, strobing with 1Hz
- nav lights (fuselage, outside of air intake; rear, below rudder) - red and green, pulsing with 1Hz
- tiplights (tip of rocket imitation) - steady white
- landing lights (nose gear flap) - steady white

The following figure indicates the position of the lights and the colours.



Nav lights are 3W 130° wide angle LEDs for the nav and strobe lights allowing wide visibility. Wingtip lights and landing light are standard LEDs for a directed light beam.

