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MEDIA INFORMATION

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Alenia Aermacchi M-346

The M-346 is the most advanced/lead-In fighter trainer currently produced and the only new generation trainer optimized for the role. Its excellent performance and flying qualities, which mimic modern frontline fighters, make the M-346 a superior fighter trainer. Its advanced design solutions provide high safety standards and reduced acquisition and operational costs. The M-346 is tailored to train pilots to fly new generation combat aircraft and is well suited for every phase of advanced and pre-operational training, allowing a reduction in the flight hours needed on the more expensive frontline aircraft.

The M-346 embodies the latest “design-to-cost” and “design-to-maintain” concepts, with avionics modelled on those of latest generation military aircraft such as the Eurofighter, the Gripen, the Rafale, F-16, F-18, F-22 and the future JSF.

The structural design already includes nine hard-points, allowing up to 3000 kg of external stores to be carried. The M-346 is characterized by installation of the Helmet Mounted Display and by provisions for tactical data link and Multi-mode Radar and Electronic Warfare System. The speed of the M-346, its ability to climb quickly and the extreme manoeuvrability make it a good representation of the high performance fighter the pilots are trained for and a highly survivable aircraft. The low maintenance man hours per flight hour and efficiencies offered by a trainer-based aircraft design also make it a very cost effective option.

The M-346 is the ideal platform for the next generation Integrated Training Systems.

In November 2009, the Italian Air Force signed the contract for the first batch of six M-346, including simulators and integrated logistics support, to fulfill the advanced/lead-in fighter training requirements for pilots that will fly the future generation combat aircraft. This contract forms part of a broader agreement to supply a total of 15 M-346 and related support.
In June 2011 the General Directorate for Aeronautical Armaments of the Italian Ministry of Defense issued the military type certificate for the M-346 trainer aircraft. This certification is a fundamental requirement for all aircraft that will be operated in a military environment. At the beginning of January 2012, the first two M-346s (which has been designated T-346A) were delivered to the Flight Test Unit at the Pratica di Mare air base (Rome), where they proceeded to undergo operational tests.

At the end of September 2010, Alenia Aermacchi signed the first international contract with the Republic of Singapore within their Fighter Wings Course (FWC) Program, which aims to replace the current fleet of trainers. The consortium, comprised of ST Aerospace (prime contractor) and Boeing, was awarded the contract to supply 12 M-346 aircraft and the Ground Based Training System. The delivery of the first aircraft is expected in 2012. Alenia Aermacchi has also finalized with ST Aerospace the logistics support contracts for the fleet of M-346 trainers for the Republic of Singapore Air Force.

The M-346 has also been selected by the UAE and, recently by Israel’s Ministry of Defence to train its air force pilots. The Israeli Air Force will be procuring 30 M-346s to replace their TA-4 Skyhawks and became their new advanced trainer fleet.

The M-346 features innovative design solutions. Vortex lift aerodynamics, together with the full authority quadruplex Fly-by-Wire control system, allow the aircraft to remain fully controllable at angles of attack of 35° degrees. With this technological achievement, Alenia Aermacchi confirms it can autonomously design and manufacture advanced aircraft with Fly-by-Wire flight controls system. This, combined with the twin-engine configuration and very high thrust/weight ration, translates into safety levels unattainable by its competitors.

The M-346 also integrates digital avionics with the ability to simulate sensors and threats in flight (Embedded Tactical Simulation). These characteristics and its performance make the M-346 the world's leading tactical pre-operational training aircraft. The aircraft is equipped with an in-flight refuelling probe to assess the related operational capability.

The M-346 program also involves other Finmeccanica Group companies including SELEX Galileo, SELEX Elsag and Sirio Panel.

The industrial baseline M-346 made its first flight in July 2008, starting the industrialization phase. The production line of the M-346 was designed by Alenia Aermacchi to respond to the requirements of the program in terms of capacity, cost and quality, together with extensive innovative features. The production line has been completely conceived and designed to achieve the rate of 4 aircraft per month, with the capacity to respond to the market requirements with extreme flexibility, without any other additional investments.

The **Alenia Aermacchi Integrated Training System** provides, together with the aircraft, a Ground Based Training System (GBTS) harmonized with the training philosophy, enabling the student pilot to learn and rehearse the entire aircraft syllabus and all training objectives on the ground.

The M-346 baseline Ground Based Training System of Alenia Aermacchi includes: Academic Training System; a Simulation Based Training; a Flight Training Device and a Full Mission Simulator.

Enlarging the scope to the overall ITS, Mission Support System and Training Management Information System are also available.

The M-346 program is attracting increasing interest from potential international customers and partners. Besides the Italian Air Force, Singapore, Israel and the United Arab Emirates, additional opportunities exist in leading markets such as other European countries and other countries worldwide.

M-346 TECHNICAL DATA

Dimensions

Span	9.72 m	(31.89 ft)
Length	11.49 m	(37.70 ft)
Height	4.91 m	(16.11 ft)
Wing area	23.52 sqm	(253.2 sqft)

Weights

Takeoff clean	7,400 kg	(16,310 lb)
Takeoff maximum	10,200 kg	(22,490 lb)
Max external load *	3,000 kg	(6,610 lb)

** Up to nine store stations*

Power Plant and fuel

Turbofan	2 x Honeywell	F124-GA-200
Max Thrust, SLS, ISA	2 x 2,850 kg	(2 x 6,280 lb)
Internal fuel, usable	2,000 kg	(4,410 lb)
External fuel, usable (3x630 lt tanks)	1,515 kg	(3,340 lb)

Performance (Clean, ISA)

Max level speed	590 KTAS
Limit speed	572 KEAS/1.2 MN
Stall speed (reference)	95 KCAS
Rate of climb (S.L.)	22,000 ft/min
Service ceiling	45,000 ft
Range Clean/3 Ext. tanks (10% reserve)	1,070 / 1,470 nm
Max sustained Load Factor (S.L.)	8.0 g
Max sustained Load Factor (15,000 ft)	5.2 g
Max sustained Turn Rate (15,000 ft)	13 deg/sec
Takeoff Run (S.L.)	400 m (1,310 ft)
Landing roll, 20% internal fuel (S.L.)	550 m (1,800 ft)
Limit Load Factor	+8/-3 g