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RAC MiG MiG-AT

Outlook

- MiG continuing work on MiG-AT program, but lack of an order by Russian Air Force will prevent orders abroad
- Competing Yak-130 will be new RuAF advanced jet trainer
- No production forecast

Orientation

Description. Two-seat trainer aircraft.

Application. Basic/advanced training.

Sponsor. Russian Ministry of Defense.

Price Range. Estimated at \$13 million in 2008 dollars.

Status. Engineering development.

Total Produced. Two flying prototypes, four additional airframes produced through 2008.



MiG-AT

Source: Mikoyan

RAC MiG MiG-AT

Contractors

Prime

Russian Aircraft Corp MiG (RAC MiG)	http://www.migavia.ru , Bldg 7, 1st Botkinsky proyezd, Moscow, 125284 Russian Federation, Tel: + 7 095 207 04 76, Fax: + 7 095 207 07 57, Email: mig@migavia.ru, Prime
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Subcontractor

Messier-Dowty International	http://www.messier-dowty.com , Zone Aéronautique Louis Breguet, BP 10, Velizy-Villacoublay, 78140 France, Tel: + 33 1 46 29 18 00, Fax: + 33 1 46 29 18 03 (Hydraulic Pump)
Turbomeca SA	http://www.turbomeca.com , Bordes, 64511 France, Tel: + 33 5 59 12 50 00, Fax: + 33 5 59 53 15 12 (Larzac 04-R20 Turbofan)

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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data

(Preliminary)

Design Features. Conventional, unswept low-wing design with a swept vertical stabilizer. Features an unswept T-type tailplane with overwing-mounted engine air intakes and retractable tricycle landing gear.

	<u>Metric</u>	<u>U.S.</u>
Dimensions		
Wingspan	10.16 m	33.25 ft
Overall length	12 m	39.33 ft
Overall height	4.42	14.5 ft
Weight		
Max TOW (combat)	5,690 kg	12,544 lb
Max TOW (trainer)	7,000 kg	15,430 lb
Performance		
Max level speed, sea level	850 kmph	460 kt
Max level speed, 2,500 m (8,200 ft)	1,000 kmph	540 kt
Propulsion		
(2)	Turbomeca/Snecma Larzac 04-R20 turbofan engines rated 14.12 kN (3,175 lbst) each.	
(2)	Soyuz RD-1700 turbofan engines rated 16.7 kN (3,748 lbst) each.	

Variants/Upgrades

A single-seat light attack version, the MiG-AS, is on offer.

Program Review

Background. The Mikoyan design bureau joined forces with French engine manufacturer Snecma to develop a new jet trainer for a Russian Air Force requirement. The MiG-AT is powered by a pair of Larzac 04-R20 fans to be produced under license in Russia.

The aircraft was designed for maneuverability similar to that of a first-line combat aircraft; it features a service life of 10,000 flying hours or 25 years, with up to 25,000 landings.

Thales Avionics is also a partner, and provides its Topflight avionics package for the aircraft. The MiG-AT reportedly is fitted with a multifunction central computer integrated with a MIL-STD-1553B databus, a head-up display (HUD) with inputs from color video and a TV camera, a pair of multifunction cathode ray tube (CRT) displays, a laser rangefinder, an air data system, an instrument landing system (ILS), an inertial navigation system (INS), Identification Friend or Foe

(IFF) radar warning receivers, and tactical air navigation (TACAN).

The Larzac engine may be built under license in Russia by Chernyshyov, or, for Russian aircraft, replaced with the 3,750-lb-st Aviadvigatel RD-1700. The latter has been designated as the powerplant for the MiG-ATs procured by Russia.

In September 2003, MiG reported reaching an agreement with Poland's PZL Mielec whereby the latter would assemble the MiG-AT under license to fill a Polish requirement for about 50 aircraft. According to MiG, this line could also provide aircraft to other international customers for the aircraft. This announcement appears to have been very premature, if not totally inaccurate.

In 2004 Algeria was reported to be close to ordering approximately 50 MiG-29 fighters plus an unspecified number of MiG-ATs, but the North African nation later ordered the Yak-130.

Related News

MiG Tests New MiG-AT Advanced Trainer Engine – MiG Corp announced on July 29, 2008, that it had tested its MiG-AT trainer with the new AI-55I turbojet engine. The plane took off from the Zhukovsky airfield and flew for 30 minutes at an altitude of 3,000 meters. MiG also tested a variant of the trainer equipped with the RD-1700 and Larzac engines on June 27. During the 35-minute flight at an altitude of 3,000 meters, the powerplant was tested for various modes of operation. The RD-1700 engine was developed by the Tushino Soyuz Machine-Building Design Bureau (TMKB). It was built and bench-tested at the Moscow machine-building company (MMP), Chernyshyov. The base MiG-AT trainer was developed with the participation of French aerospace firms. (ITAR-TASS, 7/08)

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Funding

Russian sources have estimated development costs at \$200 million in 2000 dollars.

Timetable

Year	Major Development
1992	Selected as semi-finalist for Russian trainer requirement
1996	Prototype first flight
2002	Selected, with Yak-130, for Russian trainer requirement
2003	Agreement reported for assembly in Poland
2004	First flight of pre-series aircraft

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Forecast Rationale

RAC MiG continues to work on the MiG-AT trainer despite having no orders for the aircraft or a customer waiting for the aircraft to start rolling off the production line.

The Russian Air Force has moved away from statements made a couple of years ago by General Vladimir Mikhailov, then Commander-in-Chief of Russia's air force, that his service would procure large numbers of MiG-ATs despite having selected the competing Yakovlev Yak-130 to fill Russia's next-generation trainer requirement. His successor, Col. Gen. Alexander Zelin, said publicly in May 2007 that the RuAF would focus on procuring the Yak-130.

The plan to procure both aircraft never made sense. The idea underlying the dual acquisition plan was to use one aircraft for air combat training and the other for flight training. The additional costs of procuring and maintaining two different aircraft for roles that could be adequately handled by a single type outweigh any other consideration. Although the Russian government was able to increase defense spending as the price of Russian oil rose on the world market, a rapid drop in the

price of oil toward the end of 2008 can be expected to prevent lavish spending in the near term.

Despite the lack of support from the RuAF, RAC MiG is developing a version fitted with Russian avionics and engines (reportedly the Soyuz TMKB RD-1700) in place of the French-made Larzac turbofan, possibly in hopes of rekindling the RuAF's interest down the road.

Exports are currently RAC MiG's only hope for sales, but the export market offers no better prospects than the domestic one. Customers are bound to be concerned by the lack of a large order by the RuAF that would guarantee that the design would receive upgrades and support in coming decades. The trainer market is crowded, and even among countries with no access to Western-built competitors, the Yak-130 will provide a safer bet for future upgrades and support. With so many alternatives available, customers will hesitate before ordering from RAC MiG.

Until and unless the RuAF demonstrates a firm commitment to the MiG-AT program, the prospects for export sales remain highly speculative. At this time, we are not forecasting any production of the MiG-AT.

Ten-Year Outlook

No production currently forecast.

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