

# ARCHIVED REPORT

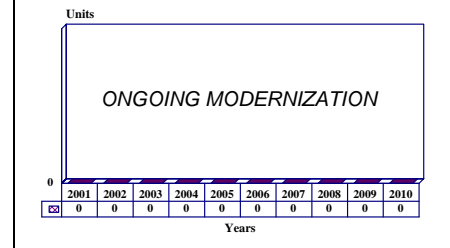
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## Mikoyan MiG-23/27 - Archived 03/2001

### Outlook

- Indian Air Force MiG-27 upgrade appears to be stalled
- Updated MiG-23-98 with glass cockpit, new radar and avionics, on offer

10 Year Unit Production Forecast  
2001 - 2010



### Orientation

**Description.** Single- and twin-seat, augmented turbojet- powered, multirole fighter/attack aircraft.

**Sponsor.** The MiG-23 and MiG-27 were originally sponsored by the Soviet Ministry of Defense. MiG-27 licensed production is sponsored by the government of India, Ministry of Defence.

**Contractors.** Mikoyan Design Bureau, Moscow, Russian Republic. Production at the Dementyev Moscow Aircraft Production Enterprise plant, formerly called the Labor Banner Factory.

**Licensee.** Hindustan Aeronautics Ltd MiG Complex, Nasik, Maharashtra, India.

**Status.** Production of the MiG-23 terminated in the USSR in 1985. MiG-27 production completed in USSR in 1986-87, in 1997 in India.

**Total Produced.** Approximately 4,674 MiG-23 and MiG-27 aircraft produced, including 165 by HAL of India, through 1997.

**Application.** Air interception, reconnaissance, heavy and light ground attack/strike.

**Price Range.** HAL-built MiG-27 unit flyaway estimated at \$15 million in 1997 US dollars.

### Technical Data

(MiG-23/MiG-27)

**Design Features.** Cantilever high-wing monoplane with variable geometry. Three degrees of sweep: 16, 45, and 72, by mechanical/hydraulic controls. Tail section incorporates a single swept vertical stabilizer with single-piece rudder and twin all-moving horizontal stabilizers. Large, two-section ventral fin is used as well. Landing gear is retractable tricycle type with dual-wheel nose unit and single-wheel main units. MiG-23 and MiG-27 have much different nose sections,

the former with a much larger radome containing search-and-track radar. The MiG-27 nose was completely redesigned, having an ogival radome sharply tapered in elevation and containing a Doppler navigation radar. Seat and canopy have been raised to provide greater pilot visibility. MiG-23s have variable geometry air inlets; MiG-27s, fixed inlets optimized for transonic performance.

	<u>Metric</u>	<u>US</u>
<b>Dimensions</b>		
Wing Span, full sweep	7.77 m	25.50 ft
Wing Span, no sweep	13.95 m	45.77 ft
Overall length, no probe	15.88/16.00 m	52.10/52.50 ft
Overall height	4.82 m	15.81 ft
<b>Weight</b>		
Operating empty	10,200 kg	22,487 lb
Maximum take-off	18,900/20,100 kg	41,667/44,313 lb
Maximum external payload	3,000/4,500 kg	6,614/9,921 lb
<b>Performance</b>		
Maximum level speed		
at altitude	2.35/1.7 Mach	2.35/1.7 Mach
at sea level	1.2/1.1 Mach	1.2/1.1 Mach
Service ceiling	18,000/16,000 m	59,055/52,493 ft
Combat radius with full weapon and external fuel load	900/390 km	485/210 nm
Ferry range	2,500 km	1,350 nm

**Propulsion**

MiG-23 Flogger A	(1)	Saturn Engine Design Bureau Lyulka AL-7F-1 augmented turbojet engine rated approximately 98.1 kN (22,046 lbst).
MiG-23 Flogger B/C/E	(1)	Moscow Scientific Production Co - Soyuz Tumansky R-27 augmented turbojet engine rated 100 kN (22,485 lbst). Maximum dry rating is 68.65 kN (15,430 lbst).
MiG-23 Flogger B/F/G/H/K	(1)	Tumansky R-29B augmented turbojet engine rated 122 kN (27,500 lbst) with full augmentation and water injection.
MiG-27 Flogger D/J	(1)	Tumansky R-29-300 augmented turbojet rated 112.8 kN (24,350 lbst) with full augmentation and water injection. Maximum dry rating is 78.45 kN (17,635 lbst).
MiG-27 Flogger ML (G)	(1)	Tumansky R-35F-300 augmented turbojet engine rated 127.5 kN (28,660 lbst). Russian Air Force aircraft only.

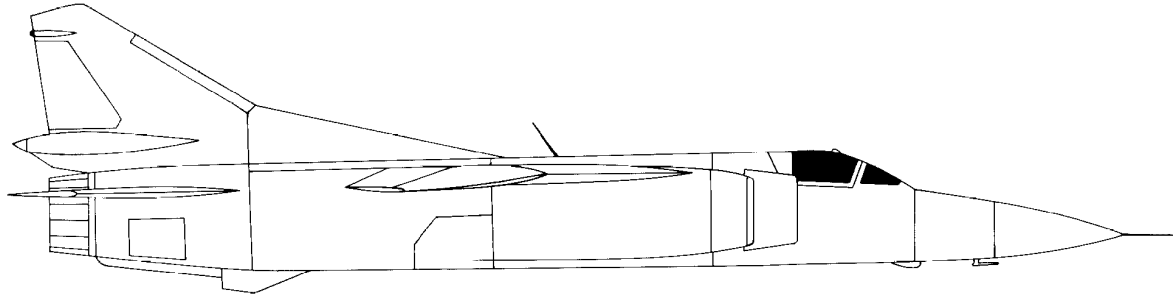
**Armament**

MiG-23. Single 23 mm twin-barrel cannon mounted in fuselage belly section. One fuselage-mounted pylon; two engine inlet-mounted weapons pylons; two wing-mounted pylons. Inlet duct pylons can accommodate dual rail launchers for short- and medium-range air-air missiles. Rocket and reconnaissance pods.

MiG-27. Single 30 mm six-barrel rotary cannon. Five pylons as for MiG-23. Addition of bomb rack under each side of rear fuselage. Tactical conventional and nuclear weapons are carried, including AS.7, AS.10, AS.12 and AS.14; all air-surface missiles. Aircraft can also carry various rocket and gun pods, 500 kg bombs, and twin 211 US gallon (800 liter) fuel tanks.

**Crew**

Single seat for pilot; MiG-23UB, two seats in tandem.

MiG-23/27

Source: Forecast International

## Variants/Upgrades

MiG-23 Flogger A. Prototype powered by Lyulka turbojet that flew in late 1967. It was replaced by MiG-23SM with four pylons for external stores under the engine inlets and inboard wing sections. A tandem-seat training version, the MiG-23UB, was developed from the SM. Prototype also designated Ye-23IG.

MiG-23 Flogger B. First series production aircraft, this also was the first to use the high-thrust Tumansky R.27 turbojet. Subsequent versions including the MiG-23MF used the even more powerful R.29 turbojet. Wing sweep was modified to account for the lighter weight of the Tumansky axial flow engine. Additional changes included a reduction in rear fuselage length and increase in dorsal fin size. MF standard with Soviet Union from about 1975.

MiG-23 Flogger C. Also designated MiG-23UM, this two-seat tandem trainer is used for operational conversion and air combat. This aircraft also uses the R.27 turbojet. Customers included the former Soviet Union, Angola, Cuba, Egypt, India, and Libya as well as several Warsaw Pact nations.

MiG-23 Flogger E. An export variant of the Flogger B and designated MiG-23MS, this aircraft had a smaller radar, shorter radome, and no infrared sensor or Doppler nav system. It is armed primarily with Atoll air-air missiles and is in service with Angola, Algeria, Cuba, Iraq, North Korea and Libya.

MiG-23 Flogger F. Also designated MiG-23BN, it is a single-seat attack version for export. Ordered by Vietnam, Algeria, Cuba, Syria, Egypt, Iraq, Ethiopia, and Libya.

MiG-23 Flogger G. Generally similar to the MiG-23MF Flogger B but with a more advanced, lightweight radar system and new undernose sensor pod. Powered by previously unknown R.35 turbojet. Standard with the Russian and Ukrainian air forces and exported to Czechoslovakia, Syria and the former German Democratic Republic.

MiG-23 Flogger H. Also designated MiG-23BN, it is very similar to Flogger F but with addition of fairing for radar warning receiver on the fuselage, forward of the nose wheel gear door.

MiG-23 Flogger K. Improved version of Flogger G has improved performance at high angles of attack, carries AA.11 air-air missiles and is among the first to have pivoting weapons pylons installed on the wings.

The MiG-27 was developed well after introduction of the interceptor version MiG-23s. It became operational with Soviet forces around 1977-1978. More than 1,050 were built.

MiG-27 Flogger D. First production version that entered service with the former Soviet Frontal aviation units.

MiG-27 Flogger J. First seen by the West in 1981, this aircraft has a modified nose containing new electro-optical sensors and laser target designator for use with guided bombs. Cockpit armor has been removed while wingroot leading edge extensions were added.

The MiG-27M export version was built under license in India by HAL and is known as the Valiant.

## Program Review

**Background.** The MiG-23/27 Flogger family of tactical fighter/attack aircraft was the culmination of two decades of research, production and development of the original MiG-15/17/21 series by the Mikoyan-Gurevich Design Bureau. Initial versions of the family were dedicated interceptors having Mach 2+ speed, high-altitude capability, and close-in combat abilities equal to those of the McDonnell Douglas F-4 Phantom

II. The development cycle of the MiG-23 began in the mid-1960s, resulting in first flight of a prototype, designated Ye-21IG, in 1967. After several pre-production aircraft were produced, the first series production aircraft, MiG-23M, entered production in 1973. All told, Mikoyan produced more than 3,700 MiG-23 aircraft.

## Funding

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Not available.

## Recent Contracts

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Not available.

## Timetable

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<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Mid	1960s	Development of swing wing MiG-23 begun
Mid	1967	First flight of MiG-23 prototype
	1970	Initial operating capability
	1973	Series production begun
	1975	First flight of MiG-27 ground attack aircraft
Late	1970s	IOC and series production of MiG-27
Mid	1980s	Production of MiG-23 completed
Mid-late	1980s	Production of MiG-27 terminated
	1986	Assembly of MiG-27 in India begun
	1997	Completion of HAL MiG-27 licensed production

## Worldwide Distribution

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(As of December 1, 1999)

<u>MiG-23</u>		<u>MiG-27</u>	
<b>Algeria</b>	72	<b>India</b>	135
<b>Angola</b>	18	<b>Libya</b>	129
<b>Bulgaria</b>	15	<b>North Korea</b>	55
<b>Cuba</b>	63		
<b>Ethiopia</b>	22		
<b>India</b>	112		
<b>Iraq</b>	60		
<b>Sudan</b>	6		
<b>Syria</b>	144		
<b>Ukraine</b>	148		
<b>Yemen</b>	24		

## Forecast Rationale

India still plans to upgrade its MiG-27s with a new radar, glass cockpit, and avionics, and provide the aircraft with the capability to deploy precision-guided missiles. However, this program may have been shifted to the back burner in favor of higher priority projects.

There is an upgraded MiG-23-98 retrofit program available, featuring new avionics and flight displays, but there have been no orders to date.

## Ten-Year Outlook

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No production forecast.

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