

# Mikoyan-Gurevich MiG-19



The Mikoyan-Gurevich MiG-19 was a day fighter and interceptor. Its NATO reporting name is Farmer.

## Versions

### ***MiG-19***

The initial MiG-19 day fighter was significantly different in design from its predecessor, the MiG-17, as it had twin Mikulin RD-9 engines. It was the first Soviet production aircraft capable of supersonic speed in level flight. The initial versions were the only versions with a conventional (not an all-flying) tail. The armament was three 23mm NR-23 cannons, two in the wings and one under the nose. Its NATO reporting name is Farmer-A.

The MiG-19 entered service with the Soviet VVS in 1955.

### ***MiG-19S and MiG-19SF***

The MiG-19S was an improved version of the MiG-19. It incorporated an all-flying tail and updated avionics.

The early versions of the MiG-19S kept the armament of three 23 mm NR-23 guns used in the initial MiG-19, but later versions switched to three 30 mm NR-30 guns. The NR-30 has slightly better rate of fire and muzzle velocity compared to the NR-23 and fires a much heavier shell. To a large degree, it combines the dogfight characteristics of the NR-23 with the anti-bomber characteristics of the N-37.

The MiG-19SF has slightly more powerful engines, but is otherwise very similar to the late MiG-19S.

The NATO reporting name of the MiG-19S/SF is Farmer-C.

The MiG-19S was built under license in Czechoslovakia as the Aero S-105 and in China as the Shenyang J-6/F-6.

The MiG-19S entered service with the Soviet VVS in 1956. It later served with the Afghan Air Force, the Albanian Air Force, the Bulgarian Air Force, the Chinese PLAAF, the Czechoslovak Air Force, the East German Air Force, the Egyptian Air Force, the Indonesian Air Force, the Iraqi Air Force, and the Pakistan Air Force (in addition to Shenyang

F-6s).

### ***MiG-19P***

The MiG-19P was an all-weather interceptor. It was based on the MiG-19S, but had a modified nose and cockpit incorporating the RP-1 Izumrud (Scan Odd) radar and had only the guns in the wing roots. Again, the early versions had two 23 mm NR-23 guns, but later versions had two 30 mm NR-30 guns. In addition to underwing fuel tanks, it often carried two underwing rocket pods for use against bombers. Its NATO reporting name is Farmer-B.

The MiG-19P was built under license in China as the Shenyang J-6A.

The MiG-19P entered service with the Soviet PVO, VVS, and AV-MF in 1956. It later served with the Bulgarian Air Force, the Chinese PLAAF, the Czechoslovak Air Force, the Iraqi Air Force, the Polish Air Force, and the Romanian Air Force.

### ***MiG-19PM***

The MiG-19PM was also an all-weather interceptor. It was essentially a MiG-19P with the guns removed, provision for four Kaliningrad K-5 (AA-1 Alkali) beam-riding missiles, and the radar modified to support the missiles. Its NATO reporting name is Farmer-E.

The MiG-19PM was built under license and in China as the Shenyang J-6B.

The MiG-19PM entered service with the Soviet PVO in 1957. It later served with the Albanian Air Force, the Bulgarian Air Force, the Chinese PLAAF, the Czechoslovak Air Force, the East German Air Force, the Hungarian Air Force, the Iraqi Air Force, the Polish Air Force, and the Romanian Air Force.

## Armament and Stores

The cannon-armed MiG-19s were equipped with either all 23 mm NR-23 or all 30 mm NR-30 cannons. Using homogeneous weapons was considered an improvement over the mixture of two 23 mm NR-23 and one 37 mm N-37 cannons in the MiG-15 and MiG-17, as the different calibers of these earlier guns had very different ballistic characteristics and so the shell streams diverged at long range.

Like most of its contemporaries, the MiG-19 suffered from short range on internal fuel, and this was mitigated by the use of under-wing 760L FTs.

The MiG-19 was potentially better suited to ground attack than the earlier MiG-15 or MiG-17, as it had four underwing stations and so could carry both FTs and air-to-ground

ordnance. However, this does not seem to have been exploited heavily except by the Pakistan Air Force. A typical air-to-ground load would be four ORO-57K RPs (on DRs) with a total of thirty-two 57 mm rockets along with two FTs.

## **Combat**

A US reconnaissance flight was shot down by PVO MiG-19s in 1960. However, Soviet MiG-19s were not able to intercept U-2 overflights.

Egyptian MiG-19s were used for ground-attack missions in 1962 during the North Yemen Civil War. Egyptian and Syrian MiG-19s saw combat in the lead-up to and during the 1967 War. In Egyptian service, it also saw combat in the War of Attrition.

## **ADCs**

- MiG-19S (Early)
- MiG-19S (Late)
- MiG-19SF
- MiG-19P (Early)
- MiG-19P (Late)
- MiG-19PM

## **See Also**

- Shenyang J-6 and F-6

## **Photo Credit**

- MiG-19: Revista Cer Senin Nr. 4/2016 (Public Domain)

MiG-19S (Early)										Crew: Pilot									
										Maneuver DPs:									
LR/DR1.5																			
VR1.0																			
Turn DPs:																			
Power APs/DPs:○○										CL1/2DT									
CL1/2DTFuel										TT1.01.01.0									
AB3.53.02.55.0										HT1.51.51.5									
M2.52.02.02.0										BT2.02.02.0									
N0.00.00.01.0										ET2.02.5—									
I1.01.01.00.0																			
SPBR1.02.02.0—																			
					Cruise Spd. CL: 5.5					Restr. Arcs: 60–									
					Climb Spd.: 4.5					Blind Arcs: 30–									
					Visibility: 5					Internal Fuel: 180									
					Size: +0					AtA Refuel: No									
					Vulnerability: +1					Ejection Seat: Early									
Speeds and Ceilings										Climb Capabilities									
Alt. Conf.		CL		1/2		DT		Dive		CL		1/2		DT					
Band Ceil.		58		53		48		Speed		AB Oth		AB Oth		AB Oth					
EH+		46+		3.5 – 8.0		4.0 – 7.5		4.5 – 7.0		10.0		1.0 0.5		1.0 0.5		1.0 0.5 EH+			
VH		36–45		3.0 – 8.5		3.5 – 8.0		4.0 – 7.0		10.0		1.0 0.5		1.0 0.5		1.0 0.5 VH			
HI		26–35		3.0 – 9.0		3.0 – 8.0		3.0 – 7.5		10.0		2.0 0.5		1.0 0.5		1.0 0.5 HI			
MH		17–25		2.5 – 8.5		3.0 – 8.0		3.0 – 7.0		9.0		3.0 1.0		2.0 1.0		1.0 0.5 MH			
ML		8–16		2.5 – 7.5		2.5 – 7.0		2.5 – 6.5		8.5		4.0 2.0		3.0 1.0		2.0 1.0 ML			
LO		0–7		2.0 – 7.0		2.5 – 6.5		2.5 – 6.0		8.0		5.0 2.0		4.0 1.0		3.0 1.0 LO			

Radar:			—			ECM:			IFF			Weapon Stations Diagram:					
ECCM:			—			RWR:			A								
Arcs:			—			DDS:			—								
Search:			—			DJM:			—								
Track:			—			AJM:			—								
Lock-On:			—			BJM:			—								
Guns:			Three 23 mm NR-23			Technology:						Load Point Limits:					
To Hit:			5/3/2			None						CL : < 3					
Ammunition:			3.0									1/2: < 7					
Gunsight:			TT+0/HT+2/BT+3									Weight Limit: 3,900					
Ranging:			—									DT : ≥ 7					
AtA/AtG:			5/5									StationLimitAllowed Loads					
Bomb System:			Manual									1 and 41,400FT					
												2 and 3550BB RP RK DR					
												Load Notes:					
												1. May use 760L FTs on stations 1 and 4.					
												2. May use ORO-57K RPs on stations 2 and 3. From 1957, may use DRs each with two ORO-57K RPs on stations 2 and 3.					
												VPs: 16/11/5/3					
												v3 0000000 0000-00-00T00:00:00					

MiG-19S (Late)										Crew: Pilot			
										Maneuver DPs:			
LR/DR		1.5											
VR		1.0											
Turn DPs:													
Power APs/DPs: ○○ CL 1/2 DT Fuel AB 3.5 3.0 2.5 5.0 M 2.5 2.0 2.0 2.0 N 0.0 0.0 0.0 1.0 I 1.0 1.0 1.0 0.0 SPBR 1.0 2.0 2.0 —					Cruise Spd. CL: 5.5		Restr. Arcs: 60–						
					Climb Spd.: 4.5		Blind Arcs: 30–						
					Visibility: 5		Internal Fuel: 180						
					Size: +0		AtA Refuel: No						
					Vulnerability: +1		Ejection Seat: Early						
Speeds and Ceilings						Climb Capabilities							
Alt. Band	Conf. Ceil.	CL 58	1/2 53	DT 48	Dive Speed	CL AB Oth	1/2 AB Oth	DT AB Oth					
EH+	46+	3.5 – 8.0	4.0 – 7.5	4.5 – 7.0	10.0	1.0 0.5	1.0 0.5	1.0 0.5	EH+				
VH	36–45	3.0 – 8.5	3.5 – 8.0	4.0 – 7.0	10.0	1.0 0.5	1.0 0.5	1.0 0.5	VH				
HI	26–35	3.0 – 9.0	3.0 – 8.0	3.0 – 7.5	10.0	2.0 0.5	1.0 0.5	1.0 0.5	HI				
MH	17–25	2.5 – 8.5	3.0 – 8.0	3.0 – 7.0	9.0	3.0 1.0	2.0 1.0	1.0 0.5	MH				
ML	8–16	2.5 – 7.5	2.5 – 7.0	2.5 – 6.5	8.5	4.0 2.0	3.0 1.0	2.0 1.0	ML				
LO	0–7	2.0 – 7.0	2.5 – 6.5	2.5 – 6.0	8.0	5.0 2.0	4.0 1.0	3.0 1.0	LO				
Radar: —			ECM: IFF			Weapon Stations Diagram:							
ECCM: —			RWR: A										
Arcs: —			DDS: —										
Search: —			DJM: —										
Track: —			AJM: —										
Lock-On: —			BJM: —										
Guns: Three 30 mm NR-30			Technology: None			Load Point Limits:				CL : < 3			
To Hit: 6/3/2						1/2: < 7							
Ammunition: 2.5		Weight Limit:				3,900 DT : ≥ 7							
Gunsight: TT+0/HT+2/BT+3		Station				Limit		Allowed Loads					
Ranging: —		1 and 4				1,400		FT					
AtA/AtG: 6/9						2 and 3				550 BB RP RK DR			
Bomb System: Manual						Load Notes:							
Notes: 1. The Mikoyan-Gurevich MiG-19S is a day fighter. It is an improved version of the original MiG-19 with an all-flying tail. This late variant has three 30 mm NR-30 cannons in place of the three 23 mm NR-23 cannons of the early version. The NATO reporting name for the aircraft is Farmer-C. 2. If a BT or ET is performed in the HI+ altitude bands, roll one die for each facing change after the first. On a 1 the aircraft suffers a maneuvering departure.						1. May use 760L FTs on stations 1 and 4.							
						2. May use ORO-57K RPs on stations 2 and 3. From 1957, may use DRs each with two ORO-57K RPs on stations 2 and 3.							
						VPs: 16/11/5/3				v3 0000000 0000-00-00T00:00:00			

MiG-19P (Early)										Crew: Pilot			
										Maneuver DPs:			
LR/DR				1.5									
VR				1.0									
Power APs/DPs: ○○										Turn DPs:			
CL	1/2	DT	Fuel		CL	1/2	DT						
AB	3.5	3.0	2.5	5.0	TT	1.0	1.0	1.0					
M	2.5	2.0	2.0	2.0	HT	1.5	1.5	1.5					
N	0.0	0.0	0.0	1.0	BT	2.0	2.0	2.0					
I	1.0	1.0	1.0	0.0	ET	2.0	2.5	—					
SPBR	1.0	2.0	2.0	—									
					Cruise Spd. CL: 5.5    Restr. Arcs: 60–								
					Climb Spd.: 4.5    Blind Arcs: 30–								
					Visibility: 5    Internal Fuel: 180								
					Size: +0    AtA Refuel: No								
					Vulnerability: +1    Ejection Seat: Early								
Speeds and Ceilings						Climb Capabilities							
Alt. Band	Conf. Ceil.	CL 58	1/2 53	DT 48	Dive Speed	CL AB   Oth	1/2 AB   Oth	DT AB   Oth					
EH+	46+	3.5 – 8.0	4.0 – 7.5	4.5 – 7.0	10.0	1.0   0.5	1.0   0.5	1.0   0.5	EH+				
VH	36–45	3.0 – 8.5	3.5 – 8.0	4.0 – 7.0	10.0	1.0   0.5	1.0   0.5	1.0   0.5	VH				
HI	26–35	3.0 – 9.0	3.0 – 8.0	3.0 – 7.5	10.0	2.0   0.5	1.0   0.5	1.0   0.5	HI				
MH	17–25	2.5 – 8.5	3.0 – 8.0	3.0 – 7.0	9.0	3.0   1.0	2.0   1.0	1.0   0.5	MH				
ML	8–16	2.5 – 7.5	2.5 – 7.0	2.5 – 6.5	8.5	4.0   2.0	3.0   1.0	2.0   1.0	ML				
LO	0–7	2.0 – 7.0	2.5 – 6.5	2.5 – 6.0	8.0	5.0   2.0	4.0   1.0	3.0   1.0	LO				

<b>Radar:</b> RP-1 Izumrud <b>ECCM:</b> 0 <b>Arcs:</b> Limited <b>Search:</b> 18-6 <b>Track:</b> 6-6 <b>Lock-On:</b> 7	<b>ECM:</b> IFF <b>RWR:</b> A <b>DDS:</b> — <b>DJM:</b> — <b>AJM:</b> — <b>BJM:</b> —	<b>Weapon Stations Diagram:</b>												
<b>Guns:</b> Two 23 mm NR-23 <b>To Hit:</b> 4/2/1 <b>Ammunition:</b> 3.0 <b>Gunsight:</b> TT+0/HT+2/BT+3 <b>Ranging:</b> RE <b>AtA/AtG:</b> 4/3*	<b>Technology:</b> None													
<b>Bomb System:</b> Manual	<b>Load Point Limits:</b> CL : < 3 1/2: < 7 <b>Weight Limit:</b> 3,900 DT : ≥ 7													
<table border="1"> <thead> <tr> <th>Station</th> <th>Limit</th> <th>Allowed Loads</th> </tr> </thead> <tbody> <tr> <td>1 and 6</td> <td>200</td> <td>IRM</td> </tr> <tr> <td>2 and 5</td> <td>1,400</td> <td>FT</td> </tr> <tr> <td>3 and 4</td> <td>550</td> <td>BB RP RK DR</td> </tr> </tbody> </table>			Station	Limit	Allowed Loads	1 and 6	200	IRM	2 and 5	1,400	FT	3 and 4	550	BB RP RK DR
Station	Limit	Allowed Loads												
1 and 6	200	IRM												
2 and 5	1,400	FT												
3 and 4	550	BB RP RK DR												
<b>Load Notes:</b> <ol style="list-style-type: none"> <li>May use 760L FTs on stations 1 and 4.</li> <li>May use ORO-57K RPs on stations 2 and 3. From 1957, may use DRs each with two ORO-57K RPs on stations 2 and 3.</li> <li>From 1961, may use AA-2 IRMs.</li> </ol>														
<b>Notes:</b> <ol style="list-style-type: none"> <li>The MiG-19P is an interceptor. It is similar from the MiG-19S day fighter, but has the RP-1 Izumrud radar and omits the gun under the fuselage. This early variant has two 23 mm NR-23 cannons. The NATO reporting name for the aircraft is Farmer-B and for the radar is Scan Odd.</li> <li>If a BT or ET is performed in the HI+ altitude bands, roll one die for each facing change after the first. On a 1 the aircraft suffers a maneuvering departure.</li> </ol>														
<b>VPs:</b> 16/11/5/3		v3.0000000 0000-00-00T00:00:00												

MiG-19P (Late)										Crew: Pilot			
										Maneuver DPs:			
LR/DR		1.5											
VR		1.0											
Turn DPs:													
Power APs/DPs: ○○ CL 1/2 DT Fuel AB 3.5 3.0 2.5 5.0 M 2.5 2.0 2.0 2.0 N 0.0 0.0 0.0 1.0 I 1.0 1.0 1.0 0.0 SPBR 1.0 2.0 2.0 —					Cruise Spd. CL: 5.5		Restr. Arcs: 60–		60–				
											Climb Spd.: 4.5		Blind Arcs: 30–
					Visibility: 5		Internal Fuel: 180		180				
					Size: +0		AtA Refuel: No		No				
					Vulnerability: +1		Ejection Seat: Early		Early				
Speeds and Ceilings						Climb Capabilities							
Alt. Band	Conf. Ceil.	CL 58	1/2 53	DT 48	Dive Speed	CL AB Oth	1/2 AB Oth	DT AB Oth					
EH+	46+	3.5 – 8.0	4.0 – 7.5	4.5 – 7.0	10.0	1.0 0.5	1.0 0.5	1.0 0.5	EH+				
VH	36–45	3.0 – 8.5	3.5 – 8.0	4.0 – 7.0	10.0	1.0 0.5	1.0 0.5	1.0 0.5	VH				
HI	26–35	3.0 – 9.0	3.0 – 8.0	3.0 – 7.5	10.0	2.0 0.5	1.0 0.5	1.0 0.5	HI				
MH	17–25	2.5 – 8.5	3.0 – 8.0	3.0 – 7.0	9.0	3.0 1.0	2.0 1.0	1.0 0.5	MH				
ML	8–16	2.5 – 7.5	2.5 – 7.0	2.5 – 6.5	8.5	4.0 2.0	3.0 1.0	2.0 1.0	ML				
LO	0–7	2.0 – 7.0	2.5 – 6.5	2.5 – 6.0	8.0	5.0 2.0	4.0 1.0	3.0 1.0	LO				

Radar:		RP-1 Izumrud	ECM:		IFF	Weapon Stations Diagram:			
ECCM:		0	RWR:		A				
Arcs:		Limited	DDS:		—				
Search:		18–6	DJM:		—				
Track:		6–6	AJM:		—				
Lock-On:		7	BJM:		—				
Guns:		Two 30 mm NR-30	Technology:			Load Point Limits:		CL : < 3	
To Hit:		5/3/1	None					1/2: < 7	
Ammunition:		2.5				Weight Limit:		3,900 DT : ≥ 7	
Gunsight:		TT+0/HT+2/BT+3				Station		Limit	Allowed Loads
Ranging:		RE				1 and 6		200	IRM
AtA/AtG:		5/6				2 and 5		1,400	FT
Bomb System:		Manual				3 and 4		550	BB RP RK DR
Notes: 1. The MiG-19P is an interceptor. It is similar from the MiG-19S day fighter, but has the RP-1 Izumrud radar and omits the gun under the fuselage. This late variant has two 30 mm NR-30 cannons in place of the two 23 mm NR-23 cannons of the early version. The NATO reporting name for the aircraft is Farmer-B and for the radar is Scan Odd. 2. If a BT or ET is performed in the HI+ altitude bands, roll one die for each facing change after the first. On a 1 the aircraft suffers a maneuvering departure.					Load Notes:				
					1. May use 760L FTs on stations 1 and 4.				
					2. May use ORO-57K RPs on stations 2 and 3. From 1957, may use DRs each with two ORO-57K RPs on stations 2 and 3.				
					3. From 1961, may use AA-2 IRMs.				
					VPs: 16/11/5/3				
					v3 0000000 0000-00-00T00:00:00				

MiG-19PM										Crew: Pilot									
										Maneuver DPs:									
LR/DR		1.5																	
VR		1.0																	
Turn DPs:																			
		CL	1/2	DT															
TT		1.0	1.0	1.0															
HT		1.5	1.5	1.5															
BT		2.0	2.0	2.0															
ET		2.0	2.5	—															
Power APs/DPs: ○○					Cruise Spd. CL: 5.5					Restr. Arcs: 60–									
CL 1/2 DT Fuel					Climb Spd.: 4.5					Blind Arcs: 30–									
AB 3.5 3.0 2.5 5.0					Visibility: 5					Internal Fuel: 180									
M 2.5 2.0 2.0 2.0					Size: +0					AtA Refuel: No									
N 0.0 0.0 0.0 1.0					Vulnerability: +1					Ejection Seat: Early									
I 1.0 1.0 1.0 0.0																			
SPBR 1.0 2.0 2.0 —																			
Speeds and Ceilings										Climb Capabilities									
Alt. Conf.		CL		1/2		DT		Dive		CL		1/2		DT					
Band Ceil.		58		53		48		Speed		AB Oth		AB Oth		AB Oth					
EH+		46+		3.5 – 8.0		4.0 – 7.5		4.5 – 7.0		10.0		1.0 0.5		1.0 0.5		1.0 0.5 EH+			
VH		36–45		3.0 – 8.5		3.5 – 8.0		4.0 – 7.0		10.0		1.0 0.5		1.0 0.5		1.0 0.5 VH			
HI		26–35		3.0 – 9.0		3.0 – 8.0		3.0 – 7.5		10.0		2.0 0.5		1.0 0.5		1.0 0.5 HI			
MH		17–25		2.5 – 8.5		3.0 – 8.0		3.0 – 7.0		9.0		3.0 1.0		2.0 1.0		1.0 0.5 MH			
ML		8–16		2.5 – 7.5		2.5 – 7.0		2.5 – 6.5		8.5		4.0 2.0		3.0 1.0		2.0 1.0 ML			
LO		0–7		2.0 – 7.0		2.5 – 6.5		2.5 – 6.0		8.0		5.0 2.0		4.0 1.0		3.0 1.0 LO			

Radar:		RP-1 Izumrud		ECM:		IFF		Weapon Stations Diagram:									
ECCM:		0		RWR:		A											
Arcs:		Limited		DDS:		—											
Search:		18–6		DJM:		—											
Track:		6–6		AJM:		—											
Lock-On:		7		BJM:		—											
Guns:		—		Technology:		None		Load Point Limits:				CL : < 3					
To Hit:		—		Weight Limit:				3,900				1/2: < 7					
Ammunition:		—										DT : ≥ 7					
Gunsight:		TT+0/HT+2/BT+3															
Ranging:		RE															
AtA/AtG:		—															
Bomb System:		Manual															
Notes:																	
1. The MiG-19PM is an interceptor. It is a development of the MiG-19P with AA-1 missiles replacing the cannons. The NATO reporting name for the aircraft is Farmer-E and for the radar is Scan Odd.																	
2. If a BT or ET is performed in the HI+ altitude bands, roll one die for each facing change after the first. On a 1 the aircraft suffers a maneuvering departure.																	
</																	