

# ARCHIVED REPORT

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## Mil Mi-60MAI

### Outlook

- The Mi-60MAI would be available in single- and twin-engine versions
- The present status of the program is uncertain

### Orientation

**Description.** Two-seat, single-main-rotor, piston-powered helicopter.

**Sponsor.** Russian Ministry of Education.

**Status.** Design and development.

**Total Produced.** None to date.

**Application.** Passenger transport, cargo transport, flight training, law enforcement, firefighting, ecological monitoring, and tourism.

**Price Range.** Estimated at \$140,000-\$150,000 in 2010 U.S. dollars.

### Contractors

#### Prime

|                                    |   |
|------------------------------------|---|
| <b>Mil Moscow Helicopter Plant</b> | <a href="http://www.russianhelicopters.aero">http://www.russianhelicopters.aero</a> , Garshina St, 26/1, Tomilino, Lyuberetsky District, Moscow Region, Russian Federation, Tel: + 7 495 669 7054, Fax: + 7 498 553 8002, Prime |
| <b>Moscow Aviation Institute</b>   | <a href="http://www.mai.ru">http://www.mai.ru</a> , Volokolamskoe Shosse 4, Moscow, 125993 GSP-3 Russian Federation, Tel: + 7 495 158 04 65, Fax: + 7 495 158 29 77, Prime  |
| <b>Rostvertol</b>                  | <a href="http://www.russianhelicopters.aero">http://www.russianhelicopters.aero</a> , ulitsa Novatorov 5, Rostov-on-Don, 344038 Russian Federation, Tel: + 7 863 2 977 371, Fax: + 7 863 2 450 134, Prime                       |

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## Mil Mi-60MAI

## Technical Data

## (Mi-60MAI)

**Design Features.** Piston-powered helicopter with a single, three-blade main rotor. The rotor hub is maintenance-free. The helicopter has a roughly tear-shaped fuselage. The fuselage is extended by a tail boom, on which are mounted a horizontal stabilizer and a two-blade tail rotor. The helicopter design makes wide use of composite materials. Landing gear are skid type.

The Mi-60MAI can carry one passenger (besides the pilot) or an equivalent cargo load internally or on an external sling. The cockpit maximizes visibility by providing large windows. Avionics include radio-communication and flight navigation equipment.

|                          | <u>Metric</u> | <u>U.S.</u>   |
|--------------------------|---------------|---|
| <b>Dimensions</b>        |               |   |
| Main rotor diameter      | 10.0 m        | 32.81 ft  |
| <b>Weight</b>            |               |   |
| Normal takeoff weight    | 800 kg        | 1,764 lb  |
| Maximum takeoff weight   |               |   |
| with HIO-360-F1AD engine | 1,115 kg      | 2,458 lb  |
| with VAZ-426 engine      | 1,300 kg      | 2,866 lb  |
| with 914F engines        | 1,260 kg      | 2,778 lb  |
| Maximum payload          |               |   |
| with HIO-360-F1AD engine | 225 kg        | 496 lb  |
| with VAZ-426 engine      | 205 kg        | 452 lb  |
| with 914F engines        | 245 kg        | 540 lb  |
| Maximum external load    | 90 kg         | 198 lb  |
| <b>Performance</b>       |               |   |
| Max cruise speed         |               |   |
| with HIO-360-F1AD engine | 175 km/h      | 94 kt   |
| with VAZ-426 engine      | 185 km/h      | 100 kt  |
| with 914F engines        | 190 km/h      | 103 kt  |
| Maximum level speed      |               |   |
| with HIO-360-F1AD engine | 200 km/h      | 108 kt  |
| with VAZ-426 engine      | 225 km/h      | 121 kt  |
| with 914F engines        | 210 km/h      | 113 kt  |
| Service ceiling          |               |   |
| with HIO-360-F1AD engine | 4,900 m       | 16,080 ft   |
| with VAZ-426 engine      | 5,500 m       | 18,040 ft   |
| with 914F engines        | 5,200 m       | 17,060 ft   |
| Hover ceiling            |               |   |
| with HIO-360-F1AD engine | 1,800 m       | 5,900 ft  |
| with VAZ-426 engine      | 3,200 m       | 10,500 ft   |
| with 914F engines        | 2,000 m       | 6,560 ft  |
| Range                    | 400 km        | 216 nm  |
| <b>Propulsion</b>        |               |   |
| Mi-60MAI                 | (1)           | AvtoVAZ VAZ-426 piston engine rated 177 kW (237 hp); or       |
|                          | (1)           | Lycoming HIO-360-F1AD piston engine rated 145 kW (195 hp); or |
|                          | (2)           | Rotax 914F piston engines rated 85 kW (113 hp) each.          |

## Variants/Upgrades

**Mi-60MAI.** Standard two-seat model. Engine options include a single AvtoVAZ or Lycoming piston engine or twin Rotax piston engines.

## Program Review

**Background.** The Mi-60MAI is a collaborative effort between Mil and Moscow Aviation Institute (MAI), hence the letters MAI appearing in the helicopter's designation. MAI is an educational institution for aviation engineering and other engineering fields. Development costs for the Mi-60MAI have been funded by the Russian Ministry of Education.

The Mi-60MAI program was announced in mid-2000. At that time, a full-scale mockup was under construction at Kazan Helicopters. However, Kazan is apparently no longer involved with the Mi-60MAI

project. In the meantime, Rostvertol did become involved in the program, with tentative plans to establish a production line for the helicopter. Rostvertol displayed an Mi-60MAI mockup at the August 2001 Moscow Aviation and Space Salon.

Construction of an Mi-60MAI prototype had been scheduled to begin in 2001, but it is uncertain whether this ever got under way.

The Mi-60MAI was included in the Russian Federal Aviation Program 2002-2010. However, there has been little recent news regarding progress on the helicopter.

## Funding

The development cost of the Mi-60MAI has been estimated at \$30 million, including \$15.8 million for construction of prototypes and preparation for series production.

## Timetable

| <u>Month</u> | <u>Year</u> | <u>Major Development</u>                    |
|--------------|-------------|---|
| Jul          | 2000        | Program announced                           |
| Aug          | 2001        | Full-scale mockup displayed at Moscow Salon |

## Forecast Rationale

With virtually no news regarding the Mi-60MAI appearing in recent years, it may well be the case that the project has been shelved. In addition, the helicopter does not appear in the product line-up listed on the Web site of Russian Helicopters, the parent firm of Mil and Rostvertol. Consequently, we are presently refraining from issuing a production forecast for the Mi-60MAI.

It seems likely that Russian Helicopters' efforts in the piston arena are now concentrated on development of the Mi-34C1, a new version of the Mi-34. Indeed, though it is a bit larger and can carry four passengers (as opposed to two), the Mi-34C1 would certainly be an indirect sales competitor to the Mi-60MAI.

A more direct competitor to the Mi-60MAI would be the highly successful, two-seat Robinson R22. Robinson devotes considerable attention to the Russian market, and its helicopters have proven popular with Russian customers.

Other competitors to the Mi-60MAI would include the Enstrom F-28F and 280FX and the Sikorsky S-300C and S-300Cbi. Each of these four models can be configured for either two or three occupants.

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