

# ARCHIVED REPORT

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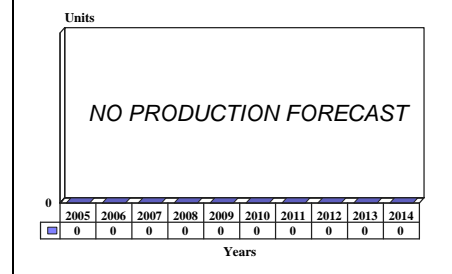
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## Mitsubishi MH-2000 - Archived 11/2006

### Outlook

- Program cancelled late 2004
- Only three production aircraft built
- One demonstrator aircraft lost in crash in 2000

10 Year Unit Production Forecast  
2005 - 2014



### Orientation

**Description.** Twin-engine, eight-passenger light commercial utility helicopter.

**Sponsor.** Mitsubishi Heavy Industries.

**Status.** Project cancelled late 2004.

**Total Produced.** Mitsubishi produced two prototypes and three production machines; one lost in crash.

**Application.** EMS, law enforcement, media reporting, corporate, and charter passenger carriage.

**Price Range.** Not applicable.

### Contractors

Program cancelled.

### Technical Data

(Preliminary)

**Design Features.** Four-bladed, single main rotor; ducted Fenestron-type tail rotor; fixed skid landing gear. Approximately 10 percent of airframe to be of composite materials.

	<u>Metric</u>	<u>U.S.</u>
<b>Dimensions</b>		
Length	14 m	45.92 ft
Height	4.3 m	14 ft
Main rotor diameter	12.2 m	40 ft
<b>Weight</b>		
Empty weight	2,500 kg	5,500 lb
Max T-O	4,510 kg	9,922 lb
Max payload	2,000 kg	4,409 lb

**Capacities**

Data not available

**Performance**

Max speed	276 kmph	149 kt
Range	700 km	378 nm

**Propulsion**

MH-2000 (2) Mitsubishi MG5-110 advanced-technology turboshaft engines, rated at approximately 653 kW (876 shp) each, max continuous.

**Seating**

Eight passengers, two crew.

## Variants/Upgrades

Not applicable.

## Program Review

**Background.** Japan's Mitsubishi Heavy Industries initiated the design of a twin-engine commercial helicopter in 1992, and subsequently explored flight parameters with a much-modified Sikorsky S-76 airframe mated with variants of the turboshaft engines. Mitsubishi is developing those engines for the Japanese armed forces' upcoming OH-X observation helicopter.

Among Mitsubishi's prime design goals was to hold down the development and acquisition costs of the new machine (designated MH-2000), an outgrowth of the earlier RP-1 experimental effort. The manufacturer planned to use off-the-shelf cockpit components and rely on conventional construction techniques. About 10 percent of the airframe was expected to be of composite materials, and Mitsubishi intended to design its own engine, gearbox, automatic flight control system, and tail rotors.

By April 1998, the two flying prototypes had accumulated about 800 hours.

**First Sale.** In early 1998, Mitsubishi announced that it had sold an MH-2000 to Tokyo-based Excel, a general

aviation operator that planned to use the aircraft for evening sightseeing tours over the city.

**Design Problems.** In mid-1998, Mitsubishi began addressing the excessive vibration encountered during flight tests. The first MH-2000 was delivered in 1999, and as of mid-2000, three aircraft had been sold and delivered.

These three, plus a company demonstrator, were recalled in August 2000 to address flaws in the aircraft's metal engine covers. One aircraft crashed while on a test flight in November 2000.

The Japanese government suspended the aircraft's type certificate following the crash. Mitsubishi then redesigned the tail rotor and recertificated the MH-2000.

**Program Cancellation.** In late 2004 Mitsubishi announced it had abandoned the marketing of the aircraft, and had withdrawn all development funding for the project.

## Funding

Data not available.

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1992	Initial design studies launched
	1994	Initial proof-of-concept testing
Jan	1995	Formal program announcement
Mar	1995	Program formally launched
Jul	1996	Prototype first flight

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Jun	1997	Japanese certification
	1998	Excessive vibration levels encountered in flight testing
Late	1999	Initial deliveries
Aug	2000	Aircraft recalled to address design flaw
	2002	Aircraft recertificated
End	2004	Program terminated

## Worldwide Distribution

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Not applicable.

## Forecast Rationale

Following the redesign of the tail rotor system, the MH-2000 was re-certificated and Mitsubishi said it planned to resume flying the aircraft in 2003.

However, at the end of 2004, Mitsubishi announced it was no longer offering the MH-2000 and had withdrawn

all remaining development funding from the project. Although the manufacturer stopped short of announcing its outright cancellation, we believe this has, in fact, occurred and we are not forecasting a revival of the MH-2000.

## Ten-Year Outlook

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No production forecast.

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