



MALIBU M-CLASS OWNERS & PILOTS ASSOCIATION

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FACT SHEET

About the Piper PA46

PA46 Model Names

Malibu Mirage Meridian Matrix
JetPROP M350 M500 M600

The PA46 was one of the first general aviation pressurized, cabin-class, single-engine aircraft ever produced. The aircraft is still in production with both piston-engine and turboprop-engine versions. All aircraft were and continue to be manufactured by Piper Aircraft in Vero Beach, FL.

PA46 Production Timeline

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| 1983 | The Piper PA46-310P Malibu is FAA certified. The aircraft is equipped with the 310-hp Continental TSIO-520 piston engine. |
| 1988 | The Piper Mirage is certified, replacing the Malibu. The Mirage is equipped with the Lycoming TIO-540 engine producing 350 horsepower, higher gross weight & additional redundant systems. |
| 2001 | Piper Meridian is certified and begins deliveries. Based on the Mirage airframe, the Meridian is a single-engine turboprop powered by a Pratt & Whitney PT6A engine delivering 500 shp. |
| 2007 | Introduction of the Matrix, a non-pressurized version of the Mirage offered at a lower price-point than the Mirage. |
| 2015 | The Piper Mirage is rebranded the M350, featuring an upgraded Garmin G1000 flight deck with advanced flight control system. |
| 2015 | The Piper M500 is introduced, replacing the Meridian. It features upgraded Garmin G1000 flight deck technology and advanced flight control system. |
| 2015 | The M600 single-engine turboprop is introduced, featuring an all-new wing with greater fuel capacity, 600-shp Pratt & Whitney Canada PT6-42A engine and Garmin G3000 avionics suite. |

The Malibu M-Class Owners & Pilots Association (MMOPA) is a not-for-profit organization dedicated to the interests and safety of owners and pilots worldwide who fly PA46 derivative aircraft. MMOPA was founded in 1988, and now serves more than 1,000 members. MMOPA is not affiliated with Piper Aircraft Company.



PA46 Specification Comparison*

	PA46-310P Malibu	PA46-350P Mirage/M350	PA46-500TP Meridian/M500	PA46-600TP M600
Total produced**	357	676	646	99
Powerplant	Continental TSIO-520 (310 hp)	Lycoming TIO-540 (350 hp)	Pratt & Whitney Canada PT6A-42A (500 shp)	Pratt & Whitney Canada PT6A-42A (600 shp)
Propeller	Hartzell 2-blade	Hartzell 3-blade	Hartzell 4-blade	Hartzell 4-blade
Fuel capacity	120 gallons usable)	120 gallons (usable)	170 gallons (usable)	260 gallons (usable)
Typical cruise speed (true airspeed)	196 kts.	203 kts.	265 kts.	274 kts.
Max altitude	25,000 ft.	25,000 ft.	30,000 ft.	30,000 ft.
Range with max fuel + reserves	1,261 nm.	1,055 nm.	1,000 nm.	1,484 nm.
Maximum takeoff weight	4,100 lbs.	4,340 lbs.	5,092 lbs.	6,000 lbs.
Seating	1 pilot + five passengers	1 pilot + five passengers	1 pilot + five passengers	1 pilot + five passengers
Wingspan	43 ft.	43 ft.	43 ft.	43 ft. 2 in.
Height	11 ft. 4 in.	11 ft. 4 in.	11 ft. 4 in.	11 ft. 4 in.
Length	28 ft. 10 in.	28 ft. 10 in.	29 ft. 7 in.	29 ft. 10 in.

*As originally certified

** As of Dec. 31, 2018

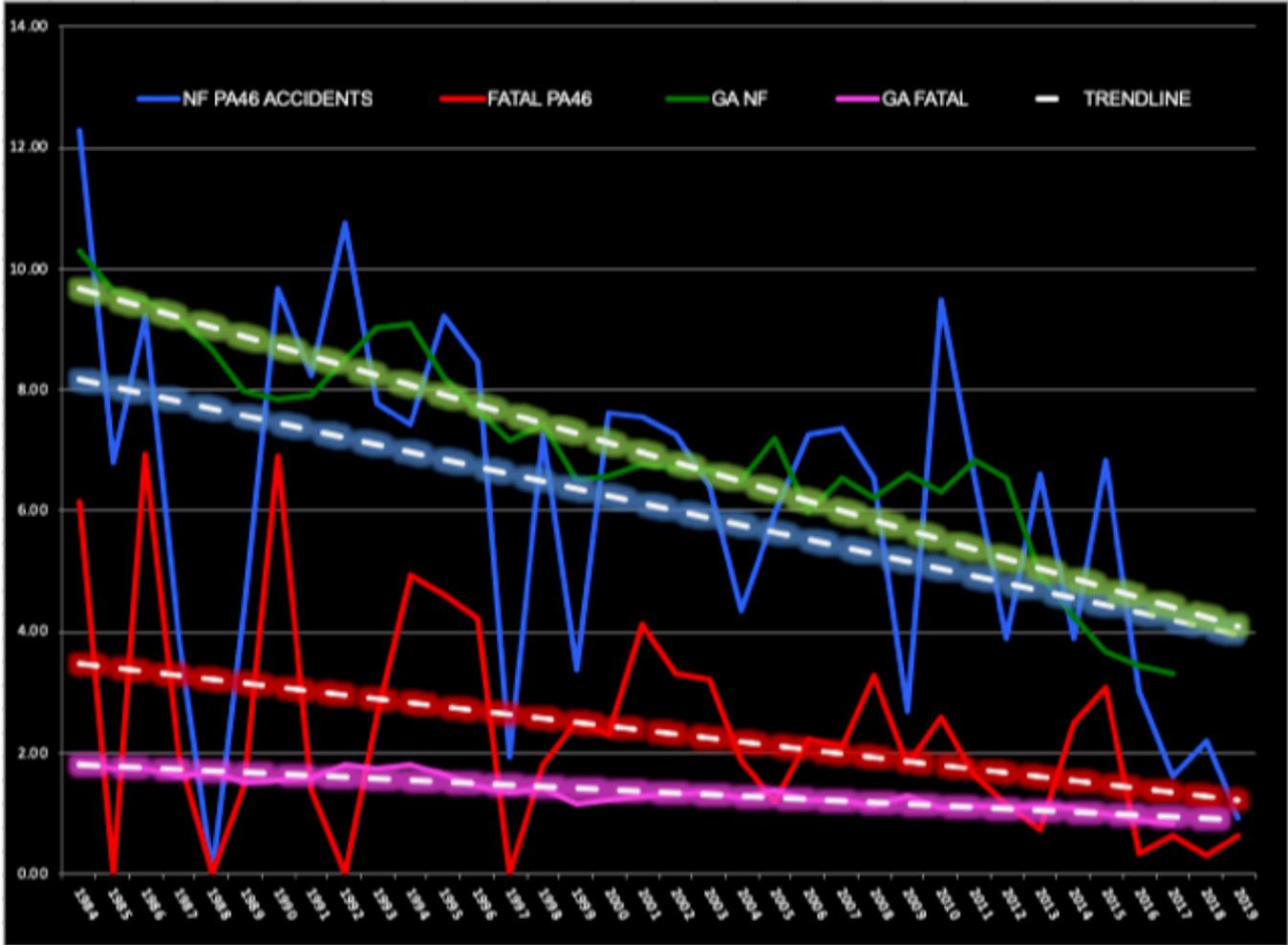
In the late 1990s, an aftermarket variant was developed by Rocket Engineering that retrofitted the Piper Malibu/Mirage with a Pratt & Whitney Canada PT6A engine. The current production DLX is equipped with the PT6A-35 engine. There have been approximately 309 aircraft converted to the JetPROP configuration.

JetPROP DLX	
Typical cruise speed (true airspeed)	250 kt.
Max altitude	27,000 ft.
Range with max fuel + reserves	1,000 nm.
Max takeoff weight	4,340 lbs.



Safety Record of the PA46

Since its introduction in 1983, more than 2,300 PA46 aircraft have been built. According to NTSB and other sources that track aircraft accident data, the safety record of the PA46 has steadily improved since the aircraft was introduced. Today the fatal accident rate of the PA46 is close to the overall average accident rate of general aviation. Due to the small number of PA46 airframes versus the large number of general aviation aircraft in operation, the comparison may fluctuate significantly from year to year.



Source: The Nall Report, NTSB, and international sources. Data compiled by David McVinnie



PA46 History: Exoneration of the PA46 Airframe Following Special NTSB Investigation

Between 1989 and 1991, the PA46 was involved in seven fatal accidents worldwide following departures from controlled flight. In 1990, following the fourth U.S. fatal accident, the FAA issued an emergency airworthiness directive and NTSB initiated an investigation into the accidents. The special investigation included a review of the relevant design features of the Malibu and Mirage, including structural integrity, flight control systems, and operating limitations. The investigation also looked at the flight experience and training of the pilots, particularly as related to flying in IMC at and above freezing levels with relatively sophisticated integrated flight guidance and control systems.

After an exhaustive investigation, the NTSB issued its report on July 21, 1992. An excerpt:

The probable causes of the five fatal accidents that occurred in the United States are include in the report. The investigation analysis of the relevant data indicate that the causes of the accident involved failure to use pitot heat in freezing IMC, possible misuse of the integrated flight guidance and control systems, loss of control, and in-flight airframe failures due to loads and stresses that substantially exceeded design limits.

When the NTSB launched its special investigation into the cause of the four fatal U.S. crashes, a group of concerned owners formed the Malibu Coalition whose members comprised of Don Jacobson, Lee Morse, Michael Alper and John Foster. The Coalition participated in the NTSB review, bringing onboard former FAA administrator Langhorn Bond and human factors investigator Dr. Fred Hyman. The Coalition participated in the entire FAA/NTSB review, which led to the rescinding of the emergency AD and exonerated the integrity of the PA46 airframe. The NTSB made several safety recommendations concerning modifications to the aircraft's flight manual and for the improvement to initial pilot training.

Following the investigation's conclusion, the Malibu Coalition was dissolved and remaining funds were disbursed to the fledgling Malibu Mirage Owners and Pilots Association, which would continue to carry the banner in the name of safety for PA46 owners.



About MMOPA

MMOPA serves owners and advocates of the PA46 aircraft through three key tenets:

Safety – Promote the safe and professional operation of the PA46. MMOPA provides programming, events, tools and resources to help owners operate their aircraft in the safest manner possible;

Advocacy – Represent the best interests of the PA46 community, and the GA community at large;

Community – Provide opportunities for owners, partnering companies to connect with each other and celebrate their shared passion for aviation.

The organization hosts an annual convention, which features top-notch speakers and educators in areas of safety, operations, weather, piloting skill and maintenance. The next convention is scheduled for May 30-June 2, 2019 in Amelia Island, FL.

In addition, MMOPA publishes a bi-monthly magazine featuring safety and operational content. Its yearend Safety Annual publishes the PA46 safety data, initiatives and analysis. The MMOPA website has an in-depth library with a variety of maintenance instructions and best practice documents, checklists, POH's and guides. In addition, there are training and safety content, Service Bulletin information and back issues of MMOPA Magazine. New resources are continually added and updated. MMOPA is not affiliated with the Piper Aircraft, Inc., or any other manufacturer/vendor.

MMOPA SAFETY & EDUCATION FOUNDATION: A 501(c) (3) charitable entity, the Foundation is an independent entity that is dedicated to engaging with MMOPA members to help them operate their PA46 aircraft in the safest possible manner. The foundation's sole purpose is to promote, support and fund safety initiatives, programming, resources and tools. In addition, it may include direct vouchers to MMOPA members who attend supplemental training events.

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