



MAG

1600

1600

EXCLUSIVE

EXCLUSIVE

EXCLUSIVE



THE POWER OF THREE

Welcome to the New Piper M-Class

Piper raised the curtain on three new airplanes, including the all-new M600

Monday April 13 was a day of great pride and enthusiasm at the Piper factory in Vero Beach, Fla. In front of a couple hundred VIP MMOPA members, owners, prospects, local dignitaries, press and dealers, the curtains dropped, and the next chapter in the future of Piper was unveiled. The response of those in attendance was overwhelmingly enthusiastic.

The theme of the invitation-only event was The Power of Three and, as the name suggests, three main announcements were on tap – all of which involved the M-Class product line. The first two introduced us to the next step in the Mirage and Meridian lineage – re-named to reflect not only the level of advancements made in 2015, but also the growing product line that was revealed with announcement No. 3. And as far as excitement goes, that one is pegging the VSI!

STORY BY JUSTIN LAZZERI ★ PHOTOGRAPHY BY JIM BARRETT



M350 AND M500

Every year, improvements are made to aircraft – some big, some small. That said, some years provide substantially more to chew on than others. In the case of the newly announced M350 and recently announced Meridian M500, a figurative feast is just waiting for you to pull up a chair and dig in.

Both the M350 and M500 are the most sophisticated versions in a long, long line of sophisticated aircraft. The hallmark of both product lines has been offering the marketplace what no other aircraft can — a pressurized, known-ice certified, radar-equipped, cabin-class aircraft at a price point that is considerably lower than the next comparable competitor, or in the case of the Mirage, in a class of its own. So how do you improve on this? How about making them significantly safer, easier to oper-

ate, and a portable extension of your office? That is exactly what has happened with the M350 and M500.

In 2015, the NTSB placed loss of control at the top of its Top 10 Most Wanted list for General Aviation. Coincidentally, Piper has just hit the nail on the head by certifying Garmin's Enhanced Autopilot Flight Control System (AFCS).

Advancements in and the harnessing of technology has long been a key driver in creating a safer world for all to live in. Take the automobile industry for example.



Automotive radars that foresee impending collisions and take corrective action by automatically braking are becoming more and more mainstream. Stray out of your lane, and you may feel a rumble in your seat or steering wheel, alerting you to the transgression in progress. If you watched this year's Masters Tournament, you probably heard the fantastic tagline by Mercedes Benz about using the "technology of today to make accidents a thing of the past." Perfect. Your car can be smart enough to know that something isn't right, and modern technology gives us the tools to do something about it.

In its simplest form, think of Enhanced AFCS in much in the same light — as a digital co-pilot who is there to watch over you, nudge you when you stray, and intervene if you fail to take appropriate action. It really is that simple, and folks, it works! Unmanned aerial vehicles have proven this by amassing more than 3 million flight hours, and the U.S. Navy recently landed an unmanned aircraft on a carrier deck.

Every year, improvements are made to aircraft — some big, some small. That said, some years provide substantially more to chew on than others. In the case of the newly announced M350 and recently announced Meridian M500, a figurative feast is just waiting for you to pull up a chair and dig in.

It's just now that this technology is working its way into General Aviation. Make no mistake, the glass panels, traffic-avoidance systems, and Vertical Profile Radars that we use today all transitioned from military and scheduled carriers. The challenge is implementing and, furthermore, certifying these features into a General Aviation aircraft.

Piper stepped to the plate, underwent significant certification requirements, and the end results are its safest aircraft to roll through the factory doors to date. See the Enhanced AFCS sidebar for more information on this incredible system and do yourself a favor by scheduling a time to see

it in person. It really is a fantastic platform with one goal: elevating the safety of your flight. I think we can all agree that's an endeavor worthy of our attention.

The new features don't stop there. One of those is a GRS 56 Iridium Transceiver, which allows for real-time text messaging, emails and phone calls through Garmin's Connex Satellite Service. This is another on the "you have to see this" list! Staying connected while travelling isn't just a wish-list item for many operators, it's a necessity.

And it's now possible at a very compelling price point. Monthly subscriptions for voice and text (SMS) are \$40, and usage





fees are very reasonable as well. Incoming text messages are free, and outgoing are \$1 each. Voice calls are charged per-minute/per month at \$1.60 for the first one to 50 minutes and decrease in price through several tiers as usage increases. Text messages and emails are sent and received via the MFD's AUX page. Phone calls are placed using the AUX page and can be

isolated to any combination of pilot, co-pilot and cabin as necessary, using the new GMA-350 audio panel. The whole process is seamless and call clarity is phenomenal.

Other notable new features on the M350 and M500 include:

- **GTS-825 Traffic Advisory System:** Utilizing ADS-B In as well as active traffic,



this system displays the more accurate of the two.

- **GMA-350 Audio Panel:** With features such as 3D Audio for split feeds and Blue Select entertainment distribution for fine tuning XM music and phone interface.
- **EFD-1000 Aspen Standby System:** Replaces the wet compass and provides a very capable and reliable back-up system.



THE NEW AUTOPILOT Garmin Enhanced AFCS Features and Description

AUTOPILOT EXPANDED ENGAGEMENT RANGE The autopilot on the M350, M500 and M600 has been designed and certified to engage up to the limits prescribed by TSO-C9c for autopilots. This translates to banks of up to +/- 75 degrees and pitch of up to +/- 50 degrees. This expanded range allows the Enhanced AFCS system to perform well beyond the normal flight environment.

ELECTRONIC STABILITY PROTECTION (ESP) W. AUTO ENGAGE LVL MODE ESP works independently of the autopilot and monitors the aircraft's attitude while being hand-flown. If a pilot banks past 45 degrees or pitches beyond 17 degrees nose up or 15 degrees nose down, the system will start to alert the pilot of his/her condition by initiating corrective control forces opposite of the direction of bank or pitch. If a pilot ignores or counteracts these control forces and remains in the ESP active zone for 50 percent of the last 20 seconds, the Auto Engage LVL Mode will activate, thus engaging the autopilot and returning the aircraft to a wings-level/zero-vertical speed state. From there, the pilot can select appropriate autopilot functions or disengage the autopilot and continue hand-flying. The ESP function can be disabled for training purposes, but will default to the "On" condition for the next power up.

UNDER SPEED PROTECTION (USP) USP certification allows the autopilot to remain engaged during low airspeed maneuvers and actively prevent the aircraft from stalling. The autopilot must be "On" for USP to activate. In relation to differing flight profiles, two different types of USP are available:

► **Non-Altitude Critical:** In this mode, the autopilot will sense an impending stall and transition to a minimum airspeed for autopilot functions. Altitude will be traded to maintain airspeed, and applying power for a recovery will result in a level-off at whatever altitude the aircraft can maintain.

► **Altitude Critical:** In flight profiles deemed altitude critical, such as ALT, GP and TO/GA, the response from the autopilot will be more aggressive. In these modes, USP activates through the stall warning. The aircraft's nose will be lowered to combat the impending stall, and the aircraft will fly 2 knots above where the stall warning silences. When power is applied, the aircraft will climb to correct any incurred altitude deviation.

COUPLED GO-AROUND A fantastic by-product of achieving USP certification is the ability to perform go-around procedures completely on the autopilot. Upon pushing the TO/GA button, the aircraft will pitch up to follow the flight director bars leaving the application of power and clean-up procedures as the only manual duties left for the pilot. Once established in the go-around, the pilot can select the appropriate autopilot function to complete the missed-approach procedure.

LVL BUTTON The blue "LVL" button located at the top of the panel is available to pilots (or even a non-flying passenger) to activate a wings-level, zero-vertical speed attitude simply by pushing it. This feature is available both while hand-flying and on autopilot. Activating the level mode cancels all armed and active modes of the autopilot that were previously engaged, but all modes are available after activation.

EMERGENCY DESCENT MODE (M350 AND M600) System monitors pilot interaction when cabin pressure is higher than 14,900 feet and autopilot is engaged. If determined through a series of prompts that the pilot isn't alert, the aircraft will initiate a series of descents to lower altitudes. The higher the cabin altitude, the shorter the activation time.

To see these features in action, visit [YouTube.com/user/Skytechinc](https://www.youtube.com/user/Skytechinc) and click on the M500 videos.



This is a fantastic time to be a part of the Piper family. Whether you are an employee, in the dealer network, or most especially a current or prospective owner, these announcements reflect tangible enhancements to the fleet, aimed at making already capable aircraft even more so, and a future aircraft that sets the bar even higher.

- **Digital Pressurization System:** After setting the destination airport elevation in the timer reference window, the system is automatically controlled. If no elevation is entered, it will use the last setting.
- **Weather Radar Map Overlay:** Weather radar can now be overlaid on the map of the MFD.
- **MFD Profile View:** An MFD Profile View shows winds and terrain/obstacles in a cross section as they relate to your altitude.
- **Alerts Integration:** Gear position on the MFD, "Stall" (aural), "Check gear" (aural), "Engaging autopilot" (aural). Relocated "Gear Test" and "Fire Test" buttons on the overhead panel.
- **Technomark Electroluminescent Placards:** Provide fantastic and reliable backlighting
- **USB Charger ports:** Two in cockpit and four in cabin
- **Pulse Oximeter (M350 only):** Measures the pilot's blood oxygen, heart rate and cockpit level of CO and is fully integrated with the G1000.
- **AMETEK Active Capacitance Fuel Probes (M350 only):** Replaces resistive float-type senders and integrates fully with G1000.

THE ALL-NEW M600

Introduce yourself to the new flagship of the Piper line: the M600, an aircraft that quite literally redefines the value equation for single-engine turboprops by marrying industry-leading technology with the efficiency and performance of a clean-sheet wing design. The original premise for the M600 was straightforward. From significant customer input, a mandate was established for an airframe that can carry 800 pounds in the cabin at least 1,000 nautical miles with reserves and a much higher Vmo than 188 knots. In the end, that appeared to be simply a starting point!

To achieve the program's goals, it became evident that the wing needed to be changed. What we are talking about isn't a tweak here and there. This is a new, clean-sheet, high-speed airfoil, slightly swept-wing design that's a far cry from current PA-46 models. The radar pod is integrated into the leading edge of the right-hand wing, and winglets bookmark each side of the 43-foot 2-inch span.

Using advanced tooling and machining processes, Piper was able to add substantial strength while reducing critical weight. This translates into a

wing capable of holding 260 gallons of fuel while being structurally approved for a Vmo of 250 KCAS! It's a marriage of form, function and design. Simply put, it looks really, really good and performs just as well.

As the first turboprop to bring Garmin's touchscreen G3000 to market, the M600 is full of enough features to dedicate an entire article all to itself. Specifically designed for light turbine aircraft, the G3000 comes equipped with three 16:9 aspect ratio, 12.1 inch diagonal high-resolution display units and two digital GTC 570 touchscreen controllers. Garmin's Enhanced AFCS and Connex Satellite service, introduced in the M350 and M500, is integrated - including the emergency descent feature.

So is the latest and greatest in Garmin's weather radar, the GWX 70. This solid-state radar operates on reduced power consumption, which results in extended life. A new Altitude Compensated Tilt feature automatically adjusts tilt for changes in altitude. Dual GDC 74 Air Data computers as well as Dual GRS 77 AHRS computers provide redundancy, and an Aspen EFD 1000

