

# G500: Gulfstream's Next-Gen Jet



The completely redesigned \$44.5 million Gulfstream G500.

By Mark Huber

**T**HE \$44.5 MILLION GULFSTREAM G500, which made its first flight in May 2015 and is expected to earn its Federal Aviation Administration certification later this year, is soaring to new frontiers. The large-cabin, long-range G500 is, for example, capable of a top speed of Mach 0.925 (612 nautical miles per hour) at 40,000 feet. With the throttles pulled back to Mach 0.85 (562 mph), it can still travel 5,000 nautical miles nonstop with three crew members, eight passengers, and all of their luggage. That's the equivalent of flying from Los Angeles to London, or San Francisco to Tokyo.

Photos from Gulfstream

The stand-up, three-zone, 41.5-foot-long cabin can be configured to seat up to 19, and the cross section, at 95 inches wide and 76 inches

tall, is about 7 in. wider and 2 in. taller than Gulfstream's older-generation long-haulers, the G450 and G550. The 14 oval main-cabin windows are 16% larger than on those aircraft, as well—the same size as those on Gulfstream's market-leading uber-berge, the \$69 million G650. The G500 will also have the latest Wi-Fi/in-flight entertainment system, and monitors as large as 32 in. can be ordered.

The G500's 27-in.-wide single seats have been refined with an all-new, highly contoured design aimed at reducing fatigue on long flights, and employ a new layering technique that improves the longevity of the cushions. The flexible seat frames can also be customized with variable foam density to accommodate different passenger sizes, and they come with comfortable footrests. The spacious 175-cubic-foot baggage compartment is reachable

in-flight through the aft lavatory, which can be fitted with a shower. The flexible high-tech galleys are highly customizable and feature a large sink, a 4-cu.-ft. refrigerator, a microwave/convection oven, and an optional steam oven.

**A lower cabin altitude** means less fatigue and jet lag. The pressurization system in the G500 provides a cabin altitude of 4,850 ft. and 100% fresh air at 51,000 ft., which means it's roughly cutting the cabin altitude of commercial airliners in half. Cabin noise is anticipated to be less than 50 decibels. That's about 10 fewer decibels than a Mercedes S Class at 70 mph, according to auto-decibel-dB.com. The G500 incorporates several firsts for a business jet. It is, for example, the first to be built with a data-concentration network,

an architecture that cuts weight by significantly reducing cables and parts. It's also the first fitted with geared turbofan engines that significantly cut fuel burn, noise, emissions, and operating costs. (Go to Barrons.com for a review of Textron Aviation's new, \$23.9 million Cessna Citation Longitude.)

The Pratt & Whitney Canada PW814GA engines on the G500 feature a state-of-the-art gear system that enables the engine fan to rotate more slowly while the low-pressure compressor and turbine operate at a high speed. That increases engine efficiency and delivers significantly lower fuel consumption—by as much as 20% compared with older-generation engines—while cutting emissions and noise. This increased efficiency also reduces the number of engine parts, among other things, and



New features for the pilot include large icons and a center console that facilitates speed scrolling. For the customer, a cabin 7 in. wider and 2 in. taller than older-generation long-haulers.

maintenance costs. According to Pratt, the new engines require 40% less scheduled maintenance and 20% fewer inspections than other engines in their class. The engines' operating condition and live-data feedback happens through the aircraft's automated health usage and monitoring system, or HUMS. With HUMS, irregularities are detected in real time, enabling them to be addressed quickly before they become bigger problems.

The G500 also is the first Gulfstream to incorporate full digital fly-

by-wire flight controls using active side-stick controls. Fly by wire, a technology first popularized on jet fighters like the F-16, routes pilot inputs through computers before they get to the aircraft's control surfaces. The result is smoother and more stable flying, while also preventing the aircraft from flying beyond its proscribed envelope. That makes it far less likely for bad things to happen—such as spilling coffee on the boss when the plane is climbing too fast, or, for that matter, crashing. The G500's cockpit is also

a stylish melding of ergonomics, few switches, and high-tech touchscreens with Mr. Magoo-size icons. Seriously cool cursor-control devices in the center console facilitate speed scrolling—getting pilots the information they need, when they need it, and faster.

The G500 is more than just a new airplane. It's built in a new way, assembled in an all-new production facility in Savannah, Ga. The G500 uses, for example, 50% fewer parts and 80% fewer fasteners than the earlier G450/G550 aircraft. And it will

soon have a powerful stablemate. The 6,200-nautical-mile-range, \$55.5 million G600 made its first flight on Dec. 17, 2016; its certification is planned for 2018. The G600's cabin is almost 3 ft. longer than the G500's, making it a touch more comfy on those longer flights, but it features the same cabin cross section, advanced avionics, and engine technology that is aboard the less costly G500. This is a top ride at a very decent price. ■

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MARK HUBER reviews aircraft for Business Jet Traveler.