



# FIRST LOOK AT THE GLOBAL 6000

BY PETER A. BEDELL

Bombardier's latest Global gets a new Vision

## | TURBINE PILOT |

### **Since 1996, Bombardier's Global Express and its successors have been**

at the top of the heap when it comes to large business jets. What sets the model apart from its competition is its widebody cabin and globe-spanning range. The new Globals (the Express moniker is no longer used) maintain those coveted features, but adds the Global Vision cockpit, which will be featured on all

versions of the Global—the 5000, 6000, and the upcoming 7000 and 8000 models. The model numbers roughly represent the respective airplanes' range in nautical miles. And for the Global 6000, we're talking a New York-to-Kuwait or London-to-Tokyo kind of range with eight passengers and four crewmembers.

PHOTOGRAPHY COURTESY OF BOMBARDIER



**A NEW AVIONICS** suite wrapped in a redesigned cockpit highlight the big changes in the Global line. What hasn't changed? Globe-spanning range, no-compromises loading ability, a large and quiet cabin pressurized to 4,500 feet at FL450. The small lens below the windshield houses the EVS system's infrared camera (below). The new EVS provides a much sharper picture than previous versions.

At the heart of the Global Vision system is Rockwell Collins' Pro Line Fusion avionics suite. It has four huge LCD screens with plenty of color and sharpness to bring to life whatever is depicted. Older Globals had color CRTs. There's now a synthetic vision system (SVS) displaying terrain, obstacles, and other pertinent information on both pilots' primary flight displays (PFD). There is also an enhanced vision system (EVS)—more on that later.

The new enhanced head-up display (HUD) depicts all of the usual flight information as well as terrain, obstacles, and other data from the SVS or the infrared picture from the enhanced vision system. It provides a much sharper picture than previous HUDs. There are lots of new features in the new Globals and to get a feel for it, Bombardier allowed *AOPA Pilot* a first look on a flight from its service center at the Bradley International Airport in Windsor Locks, Connecticut.

Autothrottles work from takeoff to touchdown. As you push the thrust levers ahead for takeoff, the autothrottles take over—it's set and forget. You need only to guard the levers for a possible abort until  $V_1$ . At our relatively light weight and with nearly 30,000 pounds of push from the engines, the Global 6000 picked up speed rapidly. In fact, it was a challenge to stay below 200 knots within BDL's Class D airspace. Once cleaned up and climbing, the Global 6000 made good on better than 3,000 feet per minute at 250 KIAS.

With some coaching from Bombardier pilot Mike Goggins on symbology, the data presented in the HUD is abundant and sharp. And with the SVS, it's quite easy to get lulled into believing you're in VMC when you're in the clag.

The autoflight system in the Global is intuitive and smooth. When assigned a 2,000-foot climb by ATC, the system did not command too much thrust and a resultant high pitch-up—just a nice, smooth transition to a 1,500-foot-per-minute climb and similarly smooth level-off. Another example of the autoflight system's deftness came as we neared FL410 when a shear zone caused a rapid increase in airspeed and a 2,000 fpm climb as the airplane pitched to maintain Mach 0.85 in flight level change mode. Again, the autothrottle system saw what was happening and began creeping



JIM MOORE



**THE BIG NEWS** for the Global line of jets is the Vision cockpit that focuses on the human interface. Like the HUD, the point is to keep the eyes outside. Even the control tuning panel (for radio frequency changes and other common tasks) is located on the glareshield to keep pilots' heads up. The old CRT screens are gone, replaced with four huge LCDs. Bombardier has completely renovated the cockpit with leather and brushed-chrome accents, making it a far more pleasant place to spend the 15-hour flights that the 6000 is capable of. Of course, the cabin is the nicest place to be. Notice the huge 24-inch HD monitor (below left).

back on the power early as the autopilot began a sooner-than-anticipated level off.

At FL410, Goggins recommended a Mach 0.85 cruise, which he says is a sweet spot for the airplane unless you really need to stretch the range. On this warmer-than-standard day, that worked out to 490 KTAS. Fuel burn was 3,200 pounds per hour and with 45,000 pounds of fuel available, it becomes clear how accurate the Global moniker is.

We clicked off the autopilot and made some 30-degree-bank turns. Despite the thin air and the Global's dramatic 35-degree wing sweep, the

airplane handled the maneuvers assuredly. It was a little pitch sensitive but, like most modern jets, the Global allows things you wouldn't dare try with jets of the past.

Want to get down? At 310 KIAS and flight idle, we came down at about 4,000 fpm with a clean wing. Spoilers come out in increments, with the center four panels emerging from the top of the wings for the first three notches of the lever (1/4, 1/2, and 3/4 settings). Max spoiler brings the outer two panels out as well, and the rate picks up to about 6,000 feet per minute.

At 15,000 feet, Goggins had me slow the airplane to about 100 knots in the landing configuration to demonstrate the autothrottles' envelope protection. As the airplane neared a stall at approximately 100 knots, the autothrottles automatically began adding power to keep the airplane flying.

As we descended further and neared the airport, terrain and obstacles began appearing on the SVS. A dome-like figure is displayed over your destination to provide situational awareness, and obstacles such as towers are depicted as well. The HUD is approved for CAT II operations down to a 100-foot decision height. EVS can be used to continue below DH on Cat I approaches.

For an airplane with such a dramatic wing sweep, the Global lands surprisingly slow. Effective slats and flaps are the reason, and they result in a pronounced nose-up angle—unlike the older Challenger

and Canadair RJ designs, which approach nose down. Our target speed on final was 116 KIAS. The low ref speeds—combined with effective spoilers, autobrakes, and reverse thrust—allows the Global to squeeze into short runways. Bombardier lists 2,670 feet for a sea-level landing at the max landing weight of 78,600 pounds.

As expected with this caliber of airplane, the cabin is the place to be. It's more than 48 feet long from the forward lavatory to the aft pressure bulkhead behind the baggage compartment. It's also eight feet wide and six feet, three inches tall. The aft lav (there are two!) is behind the stateroom and has a stand-up shower. The aft lav itself is a voluminous compartment, illuminated by two cabin windows. For the long-haul flights there's a crew-rest area with a lie-flat seat.

on the FMS. There are memory settings that allow pilots to customize screen partitioning based on personal preferences. In keeping with the overall heads-up theme of the Vision cockpit, radio tuning is located on the Control Tuning Panel mounted up high on the glareshield. You can also tune by clicking on a navaid on the map, for example. It's obvious that Rockwell Collins had pilots' differing preferences in mind when they designed Pro Line Fusion.

We've only scratched the surface of what the new Globals provide to their owners and

## The flight deck is akin to a high-end sports car as opposed to the luxu-panache of the passenger cabin.

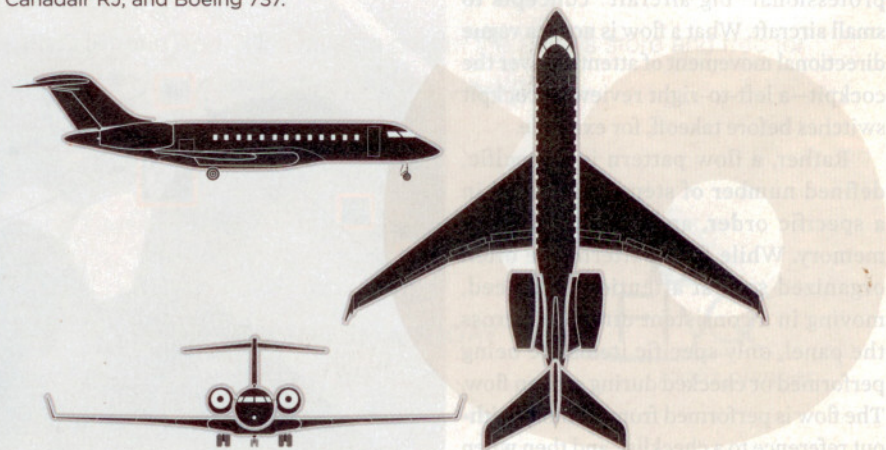
For entertainment, there are two 24-inch HD monitors with Blu-ray DVD players and iPod cradles scattered throughout the cabin. An Ethernet-based Cabin Management System with on-board local area network (LAN) and wireless LAN are the basis for an inflight office equipped as well as any on the ground. Needless to say, the Global has everything you can expect in a large business jet that lists for \$58.5 million. A key feature for the comfort of all onboard is the pressurization system, which maintains a 4,500-foot cabin at FL450. Bombardier also has been working to make the Global's cabin the quietest in its class, the company said.

Recognizing that pilots are stuck in this airplane for quite a long time, Bombardier performed a makeover of the cockpit, too. Leather wraps the pilot seats and side-walls, as well as the yokes. Brushed chrome accents adorn the power levers as well as the flap, spoiler, and parking brake handles. Carbon fiber panel inserts are also used in the cockpit area. Overall, the flight deck is akin to a high-end sports car as opposed to the luxu-panache of the passenger cabin.

The saying "more than one way to skin a cat" comes to mind regarding the human interface with the Pro Line Fusion avionics. Flight plan modification, for example, can be done through point-and-click on the map via trackball or via keypad entries

operators. These are class-leading airplanes that have features commensurate with that status. While pilots are treated to the latest in avionics technology and are ensconced in a luxury cockpit, passengers can work, refresh, or relax in a quiet cabin pressurized to a low 4,500-foot altitude. After all, for the long-haul flights that the Global series is made for, arriving in style and ready for business is what it's all about. **AOPA**

**Pete Bedell** is a first officer for a major airline. He holds type ratings in the BAe Jetstream 41, Canadair RJ, and Boeing 737.



## SPEC SHEET 2012 Bombardier Global 6000

PRICE AS TESTED: \$58.5 MILLION

### SPECIFICATIONS

Powerplants | **2 Rolls-Royce Deutschland BR700-710A2-20**  
14,750 lbst each  
Length | **99 ft 5 in**  
Height | **25 ft 6 in**  
Wingspan | **94 ft**  
Seats | **8-19 passengers, 2-4 crew**  
Cabin length | **48 ft 4 in**  
Cabin width | **8 ft 2 in**  
Cabin height | **6 ft 3 in**  
Empty weight | **52,230 lb**  
Payload w/full fuel | **2,470 lb**  
Max takeoff weight | **99,500 lb**  
Max landing weight | **78,600 lb**  
Zero fuel weight | **56,000 lb**  
Fuel capacity | **45,050 lb (6,724 gal)**

### PERFORMANCE

Takeoff distance, ground roll | **6,476 ft**  
Cruise speed/range w/8 pax, 4 crew, NBAA IFR rsv | **MO.85/6,000 nm**  
Max operating altitude | **51,000 ft**  
Landing distance, ground roll | **2,670 ft**

### FOR MORE INFORMATION

[www.bombardier.com](http://www.bombardier.com)

*All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.*