



| TURBINE PILOT |

PC-12

PROGRESS

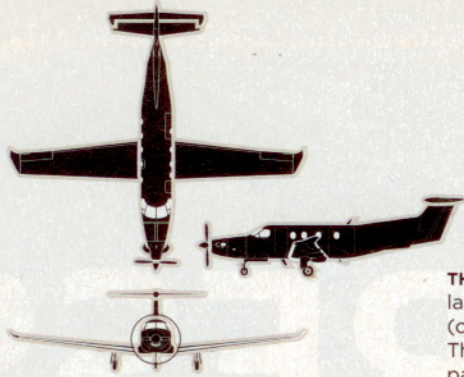
Watching a winner through the years

BY DAVID LEE

The Pilatus PC-12 is one of the most successful turboprop designs in the world. According to Sean Sanders of Pilatus Center South, the company has delivered 1,137 PC-12s since it began deliveries in 1994.

The airplane's calling card has always been its versatility. It's equally capable of carrying oil-drilling equipment to remote strips or carrying your family to a vacation in Costa Rica—or both. This big bird is capable of departing a short, unimproved runway, climbing quickly into the flight levels, cruising at nearly 280 KTAS for 1,500 to 1,800 nm, and arriving in style. Its speed range makes it capable of smoothly

← VERY HOT AREA
DO NOT TOUCH



THE EXECUTIVE interior with forward club seating (right). PC-12 landing gear are super sturdy and certified for unimproved runways (center right). The center pedestal of an early-model PC-12 (far right). The Honeywell Apex panel (below right) features four screens plus keypad and trackball controls.

blending with faster commercial traffic at major hubs, or slowing up to land at Smallville Municipal Airport in the middle of nowhere.

MODEL EVOLUTION. When first announced in 1989, FAR Part 135 rules did not allow single-engine aircraft to carry paying passengers under IFR, so the development of such an aircraft was seen by many as a huge risk.

The PC-12 models are referred to by some as “Series 9” or “Series 10” aircraft; as “Dash 45s” or “Dash 47”; as Legacy or NG aircraft; or others as “Biglet” or “Tiptlet” PC-12s. Here’s a look at the key designators across the aircraft’s still-maturing lifespan for a better understanding of what the dashes, series, and models signify.

The “dash” designations such as the PC-12/41 (“Dash 41”), PC-12/45 (“Dash 45”), and PC-12/47 (“Dash 47”) indicate the model of the aircraft as it developed over the years. The dash suffix designations refer to the aircraft’s maximum takeoff weights (MTOWs) in kilograms. The 41s had MTOWs of 4,100 kg, the 45s had MTOWs of 4,500 kgs, and the 47s have MTOWs of 4,740 kgs (9,039 pounds; 9,931 pounds; and 10,450 pounds, respectively). When the PC-12/45 was introduced in 1996, the “41s” were offered service bulletin upgrades by Pilatus to bring their MTOWs up to par with the PC-12/45.

This built a critical element of trust with the customer base. The marketing brochures didn’t say it, the advertisements didn’t mention it, but owners and operators alike took note of the subtle, but crucial,

move by Pilatus to consciously upgrade the earlier aircraft.

The first iterations were capacious and relatively fast, but they didn’t carry the payload operators demanded. The Dash 41 design was given sturdier, more capable landing gear to support a heavier payload to become the Dash 45. Pilatus continued the design improvements and labeled the block changes with series numbers 1 through 9. At each step, Pilatus made the improvements available to earlier serial numbers under service bulletins. Ultimately all of the earlier series aircraft (1 through 8) were considered “Series 9” aircraft if as they all had the service bulletin upgrades.

In 2001, the company introduced significant cockpit design changes that resulted in yet another series designation, and the “Series 10” aircraft was introduced with a vastly different panel and switch layout. These changes were major enough in scope that they could not be accommodated under service bulletin improvements, but the aircraft itself was largely the same. While the engine and performance of the aircraft remained the same, the crew warning systems, overhead switch placement, and engine instrument displays are vastly different.

The next major change came with the 2006 model PC-12/47. As mentioned previously, the /47 indicates a heavier MTOW, but there also were fundamental changes in the design that were not retrofittable to earlier aircraft. These included the Flettner anti-servo tabs that Pilatus added to the /47 ailerons; these tabs lightened the roll-handling characteristics of the aircraft. Also included were improved, larger winglets—or

EVOLUTION OF THE PC-12

PRODUCTION YR(s)	MODEL	BLOCK	SN	HIGHLIGHTS
1994-1995	PC-12/41	Series 1	101-120	4,100 kg MTOW
1996	PC-12/41	Series 2	121-140	4,100 kg MTOW
1996-1997	PC-12/41	Series 3	141-160	Known ice capability introduced
1997	PC-12/45	Series 4	161-180	Improved controls
1998	PC-12/45	Series 5	181-200	Biglets changed to tiptlets
1998-1999	PC-12/45	Series 6	201-230	Better insulation provided
1999	PC-12/45	Series 7	231-260	Flap “reset” button provided
1999-2000	PC-12/45	Series 8	261-320	Ignition system improvements
2000-2001	PC-12/45	Series 9	321-400	Environment improvements
2001-2005	PC-12/45	Series 10	401-682	Overhead panel improved
2006-2008	PC-12/47	Series 10 (cont)	683-888	Increased MTOW, roll control
2008-2012	PC-12/47E	“NG”	>889	Honeywell glass cockpit, larger motor





THE PC-12 is capable of hauling both passengers and/or freight, but most are ordered with the eight-seat executive interior.

“biglets,” as some call them. Like the earlier, smaller triplet wing tips, the idea was to make the airplane easier to handle in crosswind conditions. The PC-12/47 continued in production through mid-2008, when the next evolutionary step was announced as the Next Generation, or “NG,” the PC-12/47E model.

The 47E NG model is still in production today and includes Honeywell’s Apex Flight Deck—a four-panel, flat-screen system much like the Honeywell system found in the Gulfstream 550, Falcon 7X, and the Citation Sovereign. Pilatus also installed a thermodynamically more powerful (1,744 shaft horsepower) variant of the PT6 engine, the PT6A-67P—then flat-rated it to produce the same 1,200-shp takeoff power as the -67B model in earlier airframes. The -67P has higher interturbine temperature limits than its predecessors, so there’s significantly more power for climb and high-altitude cruise. While heavier than its older siblings, the -47E climbs 200 to 300 fpm faster, and is nearly 20 knots faster at typical cruise altitudes of FL240-260.

VALUE RETENTION. Few people know that the early deliveries were not actually serial numbers 1, 2, 3, et cetera; the PC-12 deliveries began with SN-101—a subtle move, ensuring that no one ever had to try to sell “serial number 1” on the open market. Early serial number aircraft can become lepers in the resale market, but not in the Pilatus world. Richard Foreman, of Stamford

SPEC SHEET

Pilatus PC-12

BASE PRICE: \$4.1 MILLION

SPECIFICATIONS

Powerplant | **Pratt & Whitney PT6A-67B, 1,200 lbst**
Length | **47 ft 3 in**
Height | **14 ft**
Wingspan | **53 ft 4 in**
Seats | **11 (including pilot)**
Empty weight | **6,557 lb**
Max cruise speed | **272 KTAS @FL200/491 pph**
Performance @ max altitude | **269 KTAS**
Max operating altitude | **FL300/349 pph**
Max takeoff weight | **10,450 lb**
Usable fuel | **403 gal/2,704 lb**
Useful load | **3,893 lb**
Max payload w/full fuel | **1,189 lb (pilot included)**
Takeoff over 50-ft obstacle | **2,650 ft**

www.pilatus-aircraft.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.

Connecticut, purchased his Series 1 PC-12/41 (the fourteenth produced) in 1995 for \$2 million. Nearly 17 years later, his aircraft is upgraded to the PC-12/45 designation and is a "Series 9" aircraft with a market value quite close to that same \$2 million. There are few aircraft today that can hold that kind of value over the years.

Most turbine aircraft have seen values plummet 30 percent or more since 2008 but the PC-12 has aged well and the markets have been kind. In the medium turboprop category, AMSTAT (a New Jersey-based business aircraft market research firm) reports that 9.75 percent of the turboprop fleet is for sale, compared to 4.79 percent (37 aircraft) of the PC-12 "legacy" fleet—and only 3.17 percent of the PC-12 NG fleet. In a balanced market, five percent of the

aircraft fleet is for sale at any given time. General market conditions with greater than five percent of the market for sale indicate a buyer's market, yet with fleet-wide for-sale numbers well below that, the PC-12 market is a seller's market.

As always, clean, no-damage-history aircraft with documented pedigrees will always be the first to move, but why is it that the PC-12 can buck market trends in the worst aviation market we've seen in modern times?

Perhaps the answer lies with Pilatus' product strategy, long-term view, and its approach to customer service. Pilatus clearly decided early in the PC-12 program to adopt an improvement approach to product design rather than just thinking about the next great feature. Along the way it strengthened the bonds with its customers, making owners strong loyalists—so much so that the zealots don't want to sell their aircraft, keeping values high and demand strong. Maybe other businesses should take a look at the Pilatus playbook. **AOPA**

DAVID LEE is a vice president for jetAVIVA.



ONE BUTTON-PUSH and the engine spools up (top). Programming the Apex for landing (center). The radar antenna is housed in a wing-tip pod (above).