

Get used to seeing turned-up wing tips

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[Enlarge](#) Southwest Airlines

The curved extension on the end of this Southwest Airlines 737's wing is designed to reduce drag and increase fuel efficiency.

By Roger Yu, USA TODAY

High jet fuel prices are triggering newfound interest among airlines in winglets.

Aviation Partners Boeing, the largest independent winglet manufacturer in the world, says it will deliver 530 sets to commercial airlines in 2006, a 51% increase from last year.

In 2005, APB, a joint venture between Boeing and Aviation Partners, received about 780 new orders, and it expects to equal or exceed the total this year, says Patrick LaMoria, an APB sales executive.

Winglets, an upturned extension of airplane wings that reduces drag and improves fuel efficiency, have been around for many years in private and military jets. But they had been historically too expensive for commercial airlines, says Mark Moran, a Continental Airlines executive.

That changed when jet fuel prices began to rise near the end of 2003. The persistent high fuel prices since Hurricane Katrina have sustained airline interest in spending the extra money on winglets to cut fuel use.

Continental has installed 136 sets and plans to install up to 127 more. When jet fuel was cheaper, Moran said, Continental retrofitted only as part of heavy maintenance. With current high fuel prices, the airline retrofits whenever it has the opportunity.

APB's list price for a set of winglets for a Boeing 737 is \$725,000. APB says fuel savings range from 3% to 5%.

"I think they will start sprouting as fuel prices stay high," says Richard Aboulafia at the Teal Group.

Demand comes both from airlines retrofitting existing planes and from those ordering winglets on newly manufactured planes. Among APB's 1,050 winglet sets now in service, 70% were retrofits, with the rest installed on new planes coming off assembly at Boeing's factory. APB installs winglets on B-737s and B-757s.

HOW WINGLETS WORK

Winglets reduce drag and improve fuel efficiency.

Air & Space magazine says: "Winglets reduce wingtip vortices, the twin tornados formed by the difference between the pressure on the upper surface of an airplane's wing and that on the lower surface." Reducing those powerful vortices reduces drag on the aircraft.

Winglets can:

- * Increase the range of a Boeing 737-800 by 150 miles
 - * Increase payload capability
 - * Reduce takeoff noise around airports by 6.5%
 - * Reduce nitrogen dioxide emissions on a 2,880-mile flight by 5%
- Source: Aviation Partners, Boeing

More winglet makers on horizon

APB's performance is a good indicator of customer demand, because it's the only company that makes and retrofits winglets for commercial airliners, LaMoria says. Boeing and Airbus also make their own winglets as a standard feature for new planes on some models — 747-400s for Boeing; A-330s and A-340s for Airbus. Neither retrofits.

APB could soon have new competitors. Quiet Wing in Seattle, which retrofits Boeing 727s used as private and cargo jets, plans to launch winglets for 737s later this year, says President Bob Olson.

Airbus is reviewing a winglet design by Wichita-based Winglet Technology for A-320s. The European jetmaker, which is also considering its own design, will decide this year which to use. Airbus will begin installing winglets on new A-320s for JetBlue as early as 2008, says Tom Anderson of JetBlue.

In 2003, discount giant Southwest became the first U.S. airline to start retrofitting its fleet, and others soon followed. It's now APB's largest customer with 240 planes, more than half of its fleet, now equipped. Southwest will install winglets on all future 737 deliveries. Scott Topping, a Southwest executive, says its fuel savings from winglets will be \$40 million to \$50 million this year.

American, the world's largest carrier, decided late last year to install winglets. The airline has retrofitted 10 planes so far and has orders to add winglets on as many as 257 jets.