Requiem for a narrowbody

In October 2003 Boeing announced that it would end 757 production late this year because of dwindling sales. The decision came after Continental Airlines announced that it would change its last six 757-300 orders to 737-800s, reducing the backlog to 12 planes. As a result of the shutdown, Boeing took a $184-million charge against its third-quarter earnings. Production will end this year, with a likely total of 1,048 aircraft produced over 23 years.

The 757 is the first Boeing legacy jetliner program terminated in well over a decade. And its demise speaks eloquently about changes in the jetliner market.

Rise and fall of a good thing

The twin-engine Boeing 757 was designed as the successor to Boeing's highly successful three-engine 727. The aircraft was launched in August 1978 on the strength of orders from British Airways and Eastern Air Lines, which purchased 19 and 21 aircraft, respectively.

The 757 was introduced at about the same time as the 767, Boeing's twin-engine widebody airliner, and the manufacturer sought commonality between the two types wherever possible. For instance, the 757 and 767 have virtually identical flight decks, allowing a common type rating for pilots. In addition, the two models have a number of common parts and maintenance procedures, which offer cost savings to operators of both aircraft.

Original design plans called for a shorter, 150-seat version of the 757 known as the 757-100. This was cancelled, and the 757-200 went ahead alone. The official "go-ahead" decision on the 757 program was made in March 1979. Metal was cut and initial component deliveries were made by year-end. Rollout occurred in January 1982, and the 757 made its first flight the following month. FAA certification and initial deliveries took place in December 1982, and the 757 entered service with Eastern Air Lines in January 1983.

Despite a slow start, the 757 program gathered momentum. The initial production rate of 1.5 per month doubled by 1985, and although only seven 757s were sold in 1979, 1981, 1982, and 1984 combined, sales in 1988 alone totaled 161 and reached 164 units through the first half of 1989. Many of these were cancelled when Irish lessor GPA went bankrupt in the early 1990s, but airline demand increased, with the big three U.S. carriers—American, Delta, and United—each taking at least 100 planes.

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The launch order for the 757-200PF (Package Freighter) was placed by United Parcel Service in December 1985. UPS took delivery of the first of 20 -200PFs in September 1987 and ultimately took 75 aircraft. Boeing is also active on a -200 cargo conversion program, in conjunction with Singapore Technologies Aerospace. DHL has signed for 44 former British Airways planes. Boeing delivered the first converted 757 in 2001, and is responsible for finance and maintenance of the aircraft. Several other companies are offering 757 conversions, including Structural Integrity Engineering (with Alcoa) and Precision Conversions (with Goodrich).

At the September 1996 Farnborough Air Show, Boeing launched the 757-300 stretch with a then-provisional order from Condor for 12 firm and 12 option aircraft. The German charter carrier and Lufthansa subsidiary took delivery of the first aircraft, with Rolls engines, in February 1999. The plane was rolled out in late May 1998, and the plane first flew in August of that year. Condor configured the planes to carry 252 passengers. Range is 3,500 n.mi. But the decision to terminate the 757 effectively rendered the -300 a failure, with only 55 orders.

The failure of the 757-300 was accompanied by a decision not to upgrade the basic 757-200. Boeing considered and rejected a variety of product improvements that would have offered greater range and other updates. Predictably, the backlog dwindled, with zero orders in 2002. By December 2003, there were only 13 outstanding orders, with a total of 1,035 aircraft delivered so far.

The decline of new 757 demand has been accompanied by a precipitous fall in values. Appraisers currently estimate a baseline older 757-200 value of around $9.4 million, down from $18.3 million two years ago. With used aircraft prices like these, and no compelling technology changes due to a lack of upgrades, the current list price of $80 million was clearly untenable. Already appraisers are estimating values for the final production aircraft in the $40-million range, which could provide a disincentive for any carriers considering last-minute fleet "top-up" orders.

What has changed

Obviously, the 757 is first and foremost a victim of the broader market. Total jetliner demand has fallen precipitously since 2001, and Boeing's market share has slipped as well. The company delivered a peak of 612 jetliners in 1999. Deliveries in 2003 fell by more than 50%, to about 275 planes.

Yet a closer look reveals a more complicated picture. A new "clean sheet of paper" aircraft designed today for the 757 market would look a lot like the 757. The intriguing aspect of the 757's demise is that this is the first Boeing jetliner program to end because of market conditions, not technological obsolescence.

One factor concerns changes to the major airlines' hub-and-spoke route networks. As the major U.S. domestic carriers have sought desperately to cut costs and restore profitability, equipment utilization has assumed a greater importance. Carriers are seeking to avoid the less frequent arrivals and departures associated with "pulsing" hubs, focusing instead on faster-moving "rolling" hubs. Rolling hubs are characterized by smaller planes that can take off and land more often.

The average size of domestic jetliners has therefore fallen, with regional jets replacing some smaller jetliners, and trunkliner families such as the A320 and 737 supplanting some 757s. These smaller airplanes also offer the advantages of seamless commonality across a wide variety of related models, ranging from 106 to 190 seats.

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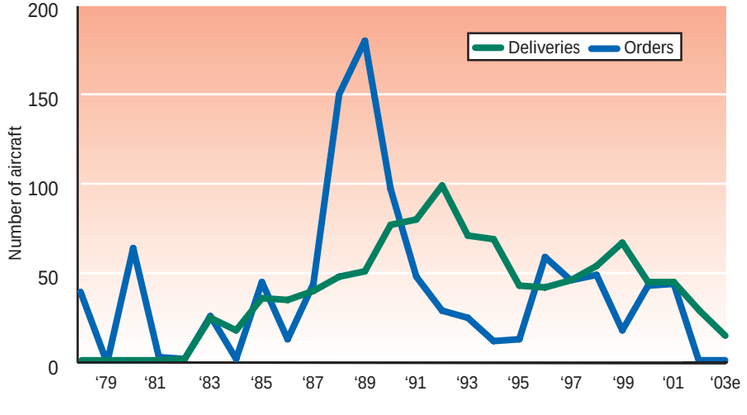
Meanwhile, in Europe, the new post-deregulation discount carriers began to reshape the market environment. EasyJet and Ryanair, using A320 and 737-based fleets, helped displace the charter carriers that previously held the low-fare travel market. These charter operators, such as Condor, represented a key source of 757 demand.

These changes exacerbated the 757's misfortunes. The backlog continued to evaporate through 2002 and 2003. A Boeing initiative to save the line by promoting sales to China was effectively torpedoed by a SARS outbreak, although Shanghai Airlines eventually placed five orders in 2003. The other eight planes on backlog comprise the remaining Continental planes, plus one for Air 2000 and two for unidentified customers.

The 757 is also a victim of its own success. The plane really hit its stride in

BOEING 757 ORDERS AND DELIVERIES



Deliveries of the 737-900, which seats 177 passengers in two classes, began in May 2001.

the 1990-1994 timeframe. The major airlines have all the 757s they need, and over half the fleet is 10 years old or younger. Most 757s fly unglamorous routes that are not a particularly big source of airline profits, particularly in the brutal U.S. domestic market. Therefore, there is little to be said for an airline that would compete on the strength of a young domestic fleet, the way Asian carriers compete with their modern and young widebody fleets.

Finally, the decision to terminate the 757 tells a story about Boeing. There are few doubts that the company could have kept the program alive through bridge funding and manufacturer financing until the market recovered, when renewed demand would probably have restored the production level to health. Yet Boeing Capital has suffered from the downturn, with notable writeoffs resulting from falling aircraft asset values and declining lease rates. Boeing has recently made changes to downplay its finance business. Since Boeing Capital has $1.2 billion of its portfolio collateralized with 757s, with another $240 million in outstanding finance guarantees, the company was reluctant to increase its exposure with this aircraft.

Replacing a perfect design

Another key part of the 757's demise has been the arrival of alternatives. The same trunkliner families that were increasingly popular alternatives were also increasingly capable machines.

After three decades of production, Boeing's 737 has evolved from a 100-seat short-range design into something far more capable. Alaska Airlines placed the launch order for a further (and almost certainly the last) 737 stretch, the 737-900. This seats 177 passengers in two classes and is a simple stretch of the 160-seat 737-800. Deliveries began in May 2001. Boeing is also offering a 200-seat variant known as the 737-900X. Like the baseline -900, it provides less range than the 757, but for flights of up to 2,700 n.mi., its operating economics are better. Boeing also plans to offer a short-range version of its proposed new 7E7 Dreamliner that will take some of the 757-300 market.

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Meanwhile, Airbus's A321, while long regarded as a less capable rival to the 757, was finally beginning to make inroads into the North American market, the 757's home turf. US Airways ordered 41, instead of increasing its 757 fleet.

Yet the 757 offers a unique combination of size, range, and operating economics, and for some routes, it remains virtually unbeatable. It also offers the added benefit of having plenty of installed power, making it appealing for high-altitude operations. The 737 and A321 feature powerplants and wings that are designed for less ambitious requirements. The 7E7, as a widebody with a large, long-range wing, will not have the same low operating costs as the 757's narrow fuselage and optimized wing.

In all, the 757 is probably the best 200/240-seat, 3,500-n.mi. transport design possible with current technology. Of course, this niche is no longer large enough to sustain a new-build program, and again, the 757 has been killed by economics, not technology.

The military aviation market shows a similar phenomenon. Before the Navy decided to field Boeing's F/A-18E/F multirole fighter, it used Grumman's F-14 for intercept missions and Grumman's A-6 for attack missions. The F/A-18E/F, as a multirole plane, is less capable in both missions than the aircraft it replaces (assuming they were upgraded with modern weapons and systems). Yet improved economics trumped specialization.

In short, while the end of the 757 program is an understandable response to market conditions, it also represents a retreat from specialization and optimization.

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