

The 1997 merger that paved the way for the Boeing 737 Max crisis

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Dozens of grounded Boeing 737 MAX aircraft are seen parked in an aerial photo at Boeing Field in Seattle, Washington, U.S. July 1, 2019.

Late in the summer of 1997, two of the most critical players in global aviation became a single tremendous Titan. Boeing, one of the US's largest and [most important companies](#), acquired its longtime plane manufacturer rival, McDonnell Douglas, in what was then the country's tenth-largest merger. The resulting giant took Boeing's name. More unexpectedly, it took its culture and strategy from McDonnell Douglas—even its commercial aviation department was [struggling to retain customers](#).

Reporting on the deal, the New York Times made an observation that now seems prescient: "The full effect of the proposed merger on employees, communities, competitors, customers and investors will not be known for months, maybe even years." Nearly 20 years later, one such effect has become the aviation story of the year, or perhaps the decade—the crashes of two 737 Max jets and the loss of 346 lives, not to mention the still-rising associated costs of [around \\$10 billion](#).

In a clash of corporate cultures, where Boeing's engineers and McDonnell Douglas's bean-counters went head-to-head, the smaller company won out. The result was a move away from expensive, ground-breaking engineering and toward what some called a more cut-throat culture, devoted to keeping costs down and favoring upgrading older models at the expense of wholesale innovation. Only now, with the 737 indefinitely grounded, are we beginning to see the scale of its effects.

"The fatal fault line was the McDonnell Douglas takeover," says Clive Irving, author of *Jumbo: The Making of the Boeing 747*. "Although Boeing was supposed to take over McDonnell Douglas, it ended up the other way around."

A turbulent path to an uneasy union

Since the start of the jet age, Boeing had been less a business and more, as [writer Jerry Useem put it](#) in *Fortune* in 2000, “an association of engineers devoted to building amazing flying machines.” For a time, this served it well: An engineers’ company made planes to make its engineers proud, whatever the cost. Employees enjoyed watertight contracts, thanks to an assertive, family-like union, and an attitude to aviation that put design and quality above all else. In the process, it produced some of the world’s greatest planes. The 707, for instance, was the [first commercially successful jet](#); the 727, launched in 1963, allowed airlines to reach airports in the developing world or with shorter runways. The company’s philosophy, as [one close observer described it](#) to researcher Edward Greenberg, was “go-for-it-and-damn-the expenses—but not damn the quality.”

Throughout the 1960s and 1970s, the company, and the US aviation industry more generally, found itself in an especially sweet spot, Greenberg told Quartz. It was “the golden age,” he said, “because the airlines—since the government actually controlled where planes could go, (assigning) landing rights in a variety of places—didn’t have competition on those routes. Any costs that the engineers at Boeing wanted to add to the plane—because it was real cool engineering, or made the plane faster or safer—didn’t matter to the airlines and they could just pass on the costs of all of that in ticket prices.”

As engineers first, managers second, Boeing’s bosses answered to airlines: The plane that would become the 737, for example, was first ordered in 1964, after Lufthansa boss Gerhard Holtje found a need for a craft that could carry around 100 passengers on short, intercity European routes. By the plane’s third incarnation, in 1981, Boeing was onto a winner.

With the dawn of the 1980s, however, Boeing’s traditional way of doing things seemed increasingly out of touch. Deregulation under US presidents Jimmy Carter and Ronald Reagan had changed the economics of the industry, Greenberg said. “The idea was that if you had more competition, it would drop prices for consumers. Suddenly, airlines are looking at this and saying, ‘Oh my God, we can’t pass on the cost by continuously raising ticket prices.’ That put pressure back on Boeing, and on Airbus eventually, to become cost-conscious.”

McDonnell Douglas was in an out-and-out nosedive. As costs climbed, the company’s stock price slumped. Everything seemed to point towards one solution: a leaner operation with more digitalization and a new openness to outsourcing and partnering. At the same time, management was desperately searching for more diverse ways to remain financially aloft.

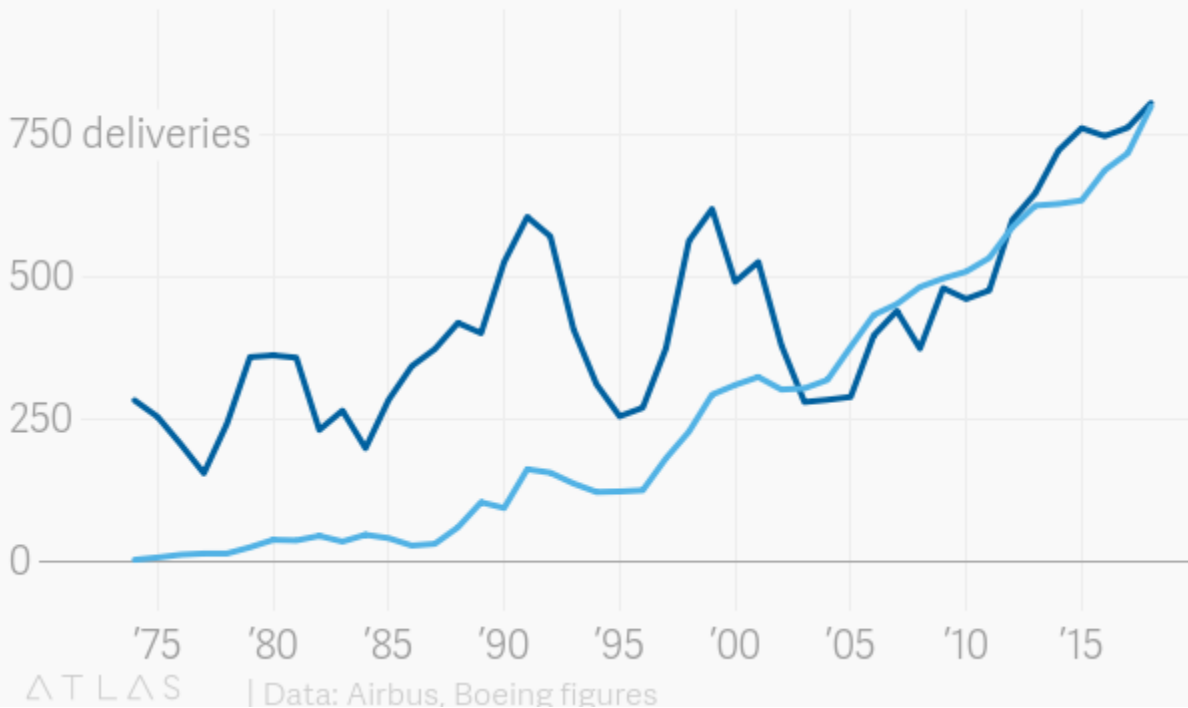
If, figuratively speaking, Boeing was suffering from engine trouble, McDonnell Douglas was in an out-and-out nosedive. The Missouri-based aerospace company was formed in 1967 after the merger of McDonnell Aircraft Corporation and Douglas Aircraft Company. By the 1990s, while its military wing remained robust, its commercial operations were waning. In 1996, Boeing took approximately 60% of the industry’s new commercial aircraft orders. Airbus, the European consortium, lingered far behind it, at 35%. McDonnell Douglas took the remaining 5%. Even its military operations had seen brighter days: The year before the merger, the Pentagon rejected its bid for new fighter jets, turning to Boeing and the Lockheed Martin Corporation instead. Boeing might have been struggling, but McDonnell Douglas seemed destined for failure.

In 1996, Boeing acquired Rockwell, a smaller aerospace and defense manufacturer, for around \$3 billion. Now, it had its sights on McDonnell Douglas. These decisions, made by Boeing CEO Phil Condit, were made with a close eye on the company’s bottom line ahead of a hotly anticipated commercial-jet boom. An ambitious program of cost-cutting, outsourcing, and digitalization had already begun. For Boeing, acquiring McDonnell Douglas held many attractions. On the one hand, it would be a victory lap of sorts, to finally take over the remnants of its oldest rival. On another, it was a prime opportunity to pick up McDonnell Douglas’ valuable military expertise and diversify its own offerings away from the turbulent commercial aircraft market, with its cycle of booms and busts.

And then there was Airbus. In less than a decade, the European company had more than doubled its annual deliveries—an upwards trajectory Boeing executives feared meant the loss of its position as the foremost commercial plane manufacturer in an increasingly expensive world.

Airbus is closing in on its biggest rival

■ Boeing ■ Airbus



After the intended merger was announced, antitrust regulators on both sides of the Atlantic considered their options. Airbus and Boeing were already one another's only significant competitor. McDonnell Douglas' very existence served a certain purpose—it appears to have made the market more competitive, in helping to drive down prices—but it remained in the doldrums. Regulators noted McDonnell Douglas “no longer [constituted] a meaningful competitive force in the commercial aircraft market,” and that, without a full line of large and small jets, it had no real plan to stave off the “grim prospect” of collapse. Without a takeover, there is every indication that the company might have failed all by itself.

The honeymoon period?

Eventually, after months of deliberation, regulators approved the match in August of 1997, with four out of five Federal Trade Commission members ruling that it would not “substantially lessen competition or tend to create a monopoly in either defense or commercial aircraft markets.”

Boeing bought the McDonnell Douglas for \$14 billion. Shares of both enjoyed a slight bump. Boeing's new acquisition allowed Condit to move forward on his other key project: diversifying Boeing's revenue streams. With the lucrative government contracts it picked up with McDonnell Douglas and Rockwell, Boeing's comparatively fledgling space and defense operations could flourish.

In the eyes of many Boeing employees, McDonnell Douglas executives seemed to do disproportionately well out of the merger: Many were given senior positions following the acquisition, with the company's head, Harry Stonecipher initially appointed chief operating officer and holding [more than twice the number](#)

[of shares](#) in the company as Condit, who remained CEO. Stonecipher and John McDonnell, formerly the chair of McDonnell Douglas' board, were now the two largest individual shareholders of the merged companies.

Stonecipher eventually became Boeing CEO in 2003, but was pushed out in 2005, after an internal investigation revealed that he was having a consensual, but extramarital relationship with a fellow Boeing executive.

In [a 2007 interview](#), Ron Woodard, the [former president of Boeing's Commercial Airplane](#) Group, bemoaned the changes the merger brought with it. "We thought that we'd kill McDonnell Douglas and we had it on the ropes," he said. "I still believe that Harry outsmarted Phil and his gang bought Boeing with Boeing's money. We were all just disgusted." More than that, he added, the company had "paid way, way too much money [for McDonnell Douglas] and we're still paying for it. We wrote off so many tens of billions of dollars for that whole mess."

"If you don't perform, you don't stay on the team." Inside the company, there were rumblings of dissatisfaction. A formerly cozy atmosphere, in which engineers ran the show and executives aged out of the company gracefully, was suddenly cut-throat. In 1998, the year after the merger, Stonecipher warned employees they needed to "quit behaving like a family and become more like a team. If you don't perform, you don't stay on the team."

Everything seemed to be changing—the leadership, the culture, even the headquarters, with a move from Seattle to Chicago in 2001. The new location seems to have been especially disorienting for Boeing employees. "There was something about the locus of the company, which was unique, that its whole history had almost been written on the same runway from the beginning, at Boeing Field" in Seattle, says Irving. Even the company's ethos seemed to have changed, he says: "There was a kind of inherent ethic about how you went about designing and manufacturing and flying planes that carried passengers, as opposed to flying military planes." For the former, you were serving individuals and airlines, interested primarily in the best way to fly; for the latter, you were playing a small part in the US' global military operations. Meanwhile, increasing shareholder value, once scarcely a consideration, grew to be more and more of a priority.

Many employees struggled to adjust, or resented what they saw as a changing of the guard, where investors took priority over passengers. "Many of the engineers happened to be the guys who pioneered the 707, and so took the company into the jet age and there was a kind of esprit de corps among them and an integrity of purpose among them," says Irving. "And they had a collective sense of what the company was meant to do and what its responsibilities were." Now, a passion for great planes was replaced with "a passion for affordability."

Stonecipher seems to have agreed with this assessment. "When people say I changed the culture of Boeing, that was the intent, so it's run like a business rather than a great engineering firm," he [told the Chicago Tribune](#) in 2004. "It is a great engineering firm, but people invest in a company because they want to make money."

How a change in approach led to the 737 Max

Two decades on, perhaps the most lasting consequence of the change in culture has been in Boeing's approach to aircraft building. Cutting costs and diversifying revenue ought to have served as an ideal way to subsidize the expensive process of plane development. Instead, with engineers now disempowered and management far away in Chicago, the actual building of new planes in Seattle all but stalled. Boeing would not actually announce even the plans for a new plane until 2003, with the 787 Dreamliner. Throughout this time, Boeing was led by its first chairman without a traditional aviation background: James McNerney had instead spent almost two decades in management at General Electric—now, he was following a tried-and-tested route of cutting, downsizing, and shifting.

That approach was applied to upgrading the 737, which had become the victim of its own success. In its five-decade history, airlines have cumulatively ordered more than 10,000 of the planes—an aviation rock star. But rather than retiring the plane, and replacing it with the next big thing, Boeing instead opted to keep costs down by tinkering and adjusting the model to fit still more passengers. The version it called the Max, writes [Irving in the Daily Beast](#), was the alternative, cheaper solution. “The airlines went for it because the new engines promised higher efficiency and—so it seemed—pilots would find it very simple to move from the [1997 737 Next Gen] to the Max.”

“None of the above should have passed the ‘OK’ pencil.” Pilots have long been aware of the plane’s shortcomings. Writing in the [engineering industry publication IEEE Spectrum](#), pilot and software developer Gregory Travis explains how these repeat redesigns have led to recent tragedies. The plane was designed for a time before machine-aided cargo loading and so sits low to the ground to aid ground crews hauling baggage. But as the planes grew larger, so too have their engines. Instead of being hung under the wing, as in earlier models, the engines have been moved forward and upward, potentially leading to an aerodynamic stall under certain circumstances. “Instead of going back to the drawing board and getting the airframe hardware right, Boeing relied on something called the ‘Maneuvering Characteristics Augmentation System,’ or MCAS,” he writes.

Put very crudely, this was a software fix for a hardware problem—and one that was far from perfect. In Travis’ estimation, the software relied on the wrong systems and sensors, without cross-checking them against other easily accessible information from the plane’s sensors. “None of the above should have passed muster,” he writes. “None of the above should have passed the ‘OK’ pencil of the most junior engineering staff.”

Light through the clouds?

For Boeing, here’s the good news: Airlines are mostly quite profitable—and profitable airlines buy airplanes. The global population able to afford to fly is growing at a staggering pace, which should also mean yet more airline purchases. Boeing may not be the absolute world number one anymore, but it enjoys a duopoly with Airbus and is still a preferred supplier for a huge number of airlines.

But there’s no denying that the Max has damaged the company. Boeing has now halted production of the plane altogether; earlier this month, CEO Dennis Muilenberg was very publicly fired by the board. Some 400 planes orders are presently on hold, while 387 already-delivered MAX planes have been grounded for months. Early assurances that recertification by the FAA would be easy to come by are now looking decidedly hollow. In the months since the crashes, longtime Boeing customers, such as United Airlines, have turned to Airbus instead—particularly amid fears passengers will refuse to fly the 737 when it returns to service. Having slumped by about 25% after the initial crashes, Boeing’s share price has since scarcely moved. Meanwhile, progress on new planes, including the proposed 797, has slowed as Boeing continues its efforts to work with the FAA on the Max.

There are no easy fixes for Boeing. A company that set the standard for jet-age manufacturing is now facing a crisis that goes to the heart of its identity: its ability to build airplanes. Scrapping the 737 altogether would mean the loss of untold billions—not scrapping it may yet cost even more. But if, as seems apparent, the company’s cost-cutters led it down the path towards this mess, its engineers may be the ones forced to bring it back out into the light.