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The Boeing 717: Carrying on the 100-Seat Legacy with Delta Air Lines

To many, the 1980s and 90s were the grandest era of airliner transport. First Class seats, gourmet meals, stylish crews—all part of the package. And, as more passengers took a liking to aviation, the travel market boomed. The era spawned not only a large production of jets, but also a lasting influence. Those aircraft shaped the modern airline industry we know today.

WHAT JETS EXACTLY ARE we talking about here? Sure, the 747 and DC-10 come to mind. But let's not forget the most influential mid-haul aircraft to date: the McDonnell-Douglas MD-80. The primary workhorse for countless airlines, the MD-80 (the 'Mad Dog') redefined the short and medium-haul market. In the late 20th century, passengers saw it at almost every airport.

While those aircraft are in limited operation today, another model carries the dignity of these 100-seater jets: the 717. One of the smallest jet airliners 20 years ago, Boeing's T-tailer featured technology and ideas that were new at the time—and few airlines expressed interest in buying it.

Why was that? What contributed to the 717's low sales? And which groundbreaking technologies did it possess?

BAD TIMING

The McDonnell-Douglas MD-80 and the ATR-72, once seen as the pinnacle of modern airliners, have dominated the midsize market for decades. Nonetheless, some of these aircraft have seen a decline in recent years. Major carriers, such as American Airlines (AA), have retired them in anticipation of newer, less costly models, taking the most iconic jets of the 20th century to the scrapyard.

One of the last T-tailed aircraft designed in the late 1900s was the Boeing 717, originally called the McDonnell-Douglas MD-95 before the companies merged in 1997. Given the massive success of the MD-80, Boeing decided to carry on with the 717 project. The aircraft bore a striking resemblance to its predecessor, but its glass/LCD cockpit included some of the newest technology at the

time, only present in a few other planes, and its Rolls-Royce BR715 turbofan engines were among the most fuel-efficient on the market. Boeing's 717 project received certification in 1999, months after flight tests were performed. American low-cost carrier AirTran Airways (FL), which had the strongest interest in the model, received the first 717 in May of that year.

Sales were initially successful, but Boeing released the 717

project just a couple of years prior to the September 11 attacks, which caused the airline economy to plummet for the following seasons. Few airlines apart from FL expressed an interest in the 717 and, in 2006, Boeing took the hard decision to shut down the project after completing all previous orders. In seven years, it had built a total of 156 of these aircraft, compared to over a 1,000 total deliveries of the MD-80 family, its predecessor.

ONGOING LIFE WITH DL

And yet, despite that brief demand, Boeing's short-haul model is still operated by nearly 20 airlines around the world. Delta (DL) continues to operate almost 70 of the aircraft today. Its fleet is larger than those of either Qantas (QF) or Hawaiian Airlines (HA), each of which has under 20 planes.

In the early 2000s, AirTran was the largest operator of the 717; however, when US low-cost airline Southwest (WN) took over the airline in the mid-2010s, it also took its 717s. Southwest planned to keep all of FL's 737s but wanted to divest itself of the rest of the fleet as quickly as possible.

Just a few months later, WN offered to lease all of FL's old 717s to Delta, customizing the planes to DL's liking. Although DL had initially planned to begin its fleet renewal process



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with newer Airbus aircraft, it agreed to acquire all aircraft immediately.

This raises the question of why such a modern and large airline would keep these planes in service.

When DL was scheduled to receive these aircraft, in 2014, much of its fleet was quite old due to its 2009 merger with Northwest Airlines (NW). Overall, the airline possessed over 200 T-tailed aircraft, including DC-9s and MD-80s. Hit hard by the 2008 economic recession, DL's main priority was to retire or sell these aircraft to save on fuel and maintenance costs, which were cutting heavily into its profits. The 717 was by no means the most efficient aircraft in the 2010s market, but it was a major upgrade from Delta's then-current domestic aircraft lineup.

At the same time, DL wanted larger aircraft for more localized routes. This was one of the first stages of its fleet renewal process. Throughout the years, the 717 proved to be moderately more efficient and versatile than DL's aging regional jets and turboprop aircraft.

Last but not least, DL believed that operating these 717s would strengthen its relationship with Boeing. At that time, the airline had signed massive orders for Airbus mainliners, planes that would later constitute a significant portion of its fleet. Bringing the 717s back into service reassured Boeing that DL was still a loyal and trusting customer, and that the American frame maker was still a big part of the airline's fleet modernization process.



WHY WAS THE 717 SO UNIQUE TO DELTA?

DL found the 717 to be versatile, useful, and appreciated by its customers. Unlike newer and smaller airliners—such as the Bombardier CRJ-700, which DL might have also chosen—the Boeing plane came with built-in Wi-Fi, 12 First Class seats, and an Economy Plus cabin, which was new to many of its aircraft.

Additionally, in terms of size, these aircraft were perfectly positioned between the 70-seater jets and the 150-seat mainliners, now often characterized as the Embraer E-Jet family. Some routes to moderately busy airports had too much passenger traffic for a regional jet, but too little for a 737. Here was a job for the aging MD-80 fleet, and airlines were already looking for potential replacements. With its size and range capabilities, the Boeing 717 was the most economically profitable option, and Delta took advantage of these.

The 717 also offered a level of fuel efficiency that was unmatched by any other aircraft in DL's fleet at the time. Especially compared to regional aircraft and smaller mainliners, it proved superior in terms of carbon emissions and noise pollution; the MD-80 and DC-9, for example, burned approximately 30% more fuel than the 717, greatly increasing fuel costs. Most aircraft flying in the early 2000s did not feature the fuel efficiency now seen in modern aircraft, which made the 717's level of fuel efficiency appealing, especially in the short-haul domestic market.

THE 717 NEARS ITS END

While the 717 did seem to find a home with DL, it did not have many years left before retirement. Currently, the carrier plans to retire them by the end of the decade, when they will be approximately 30 years old. Until then, the airline plans to use them to their full



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operational ability, on routes across the United States.

The aviation industry increasingly regards the 717 as an inefficient aircraft in a faster-moving market, but this plane has done more than just operate flights on a regular basis. It entered the aviation world at an uncertain time, when numerous workhorse aircraft were on their way to retirement, and overall aircraft sales sharply fell just years after it had entered the market.

Both the 717 and the MDs still underline the importance of the 100-seater market, with airlines such as HA using them as their go-to aircraft for island hops and DL comfortably placing them on profitable routes across the US.

WHAT'S THE REPLACEMENT?

As the Boeing 717, MD-80, DC-9, and other T-tailed aircraft dominated the 100-seat market in the late 1990s, Embraer, Bombardier, and

more recently, Airbus have taken over the industry and captivated the attention of both regional and major airlines. So far, AA has replaced its MD-80s with an Airbus A321 and Boeing 737 fleet, and Iberia (IB) has replaced its own with the Airbus A320 family. Additionally, both of these carriers have supplied their subsidiary regional airliners with similar aircraft, such as the CRJ-900.

Aircraft manufacturers are starting to shy away from T-tailed aircraft, but many newer models have been designed from the concepts that informed the MD-80 and 717 series, such as the A220, with its comfort options and range. Following the success of these aircraft (one that has been short and sweet for the 717), the industry has begun to understand the level of demand for these aircraft.

Some companies utilize similar designs, such as the Bombardier C-jets, now used for regional feeder airlines across the globe.

Others, such as Airbus and Embraer, have designed smaller wing-over-engine aircraft, as shown by the Embraer ERJ-family. The short to medium-haul market has undoubtedly risen in popularity amid the retirement of the MD-80 and the more developed 717.

At first, DL considered the Airbus A220-100 as the perfect replacement for its aging 717 fleet. The A220-100 is fitted with 12 First Class, 15 Premium Comfort, and 82 Economy class seats in a cabin that is approximately the same size as the 717s. This aircraft would potentially operate the 717's routes, generally flying between semi-busy locations.

However, the carrier has recently realized that the A220 is not the ideal replacement it initially thought it would be. The A220 works most efficiently on longer two- and three-hour flights, but the 717 still dominates shorter one-hour hauls. So, as of now, DL strongly believes that nothing could possibly replace an aircraft as unique as the 717—not even the most advanced and modern designs.

CONCLUSION

To carriers such as Hawaiian and Delta, the Boeing 717 has proven to be like no other aircraft, operating on routes on which it cannot be replaced by any other aircraft at this time. This workhorse will leave a long-lasting mark in the market, inspiring more future 100-seater aircraft. The 717 serves as a reminder to not judge a book by its cover—while it did not display the same level of success as other 20th century aircraft, its unique technology was groundbreaking at the time, and it helped airlines across the globe for 30 years. ☺