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Pandemic Hastens the End of Jumbo Jets

While some of the effects of the pandemic on the aviation industry are transient, some of its consequences will be completely permanent. Airlines, which used to gain favor by claiming a four-engine plane was better and stronger than a twin-engine plane, today are trying to figure out how to shift all planes in their fleets to twin-engine aircraft.

Four-engine aircraft, such as the Boeing 747, which has been in active service since the first human set foot on the Moon, the Airbus A380 which had been decided upon to be discontinued in 2021, and the Airbus A340 which has been operating in the airline's fleet for 27 years

without being involved in a single fatal crash, have all reached the end of the road due to the pandemic.

The pandemic has thrust the aviation industry into the most turbulent times in its history and has led airlines to make radical future decisions. Airlines that had to ground all their planes for about 2 months had taken a series of future actions in fleet planning to survive the financial crisis they had experienced in the last months. In addition to options such as delaying the delivery schedule of orders placed to manufacturers, canceling some orders completely, returning leased aircraft in the fleet earlier than planned, the retiring of

inefficient aircraft in the fleet has been one of the most frequently used methods to help reduce expenditures.

Post-pandemic estimates for the aviation industry suggest that 2019 figures could not be achieved before 2023. This shows that it is difficult to reach more than 500 passengers in both directions on many routes. For this reason, airlines rescheduled the retirement plans of Boeing 747, Airbus A340 and A380 planes, which have high operational and maintenance costs, and are inefficient, and accordingly directed the vast majority of them to aircraft graveyards for good.

Boeing to end 747 production!

When it was first introduced in the early 1970s, the Boeing 747 was like a miracle. The aircraft, which can carry up to 600 passengers and crew in its variants, is estimated to have flown more than 3.5 billion people around the world so far. Since its launch, Boeing has sold more than 1,500 747s. There are also 17747 orders currently waiting to be produced.

Before the pandemic, Boeing had many questions on its mind about the future of the jumbo jet, even though the 747's order book still reflected a double-digit



Airbus A380

number. For nearly 5 years, the U.S. manufacturer itself was fueling speculation that the 747 production would end. Boeing finally announced in an official statement in July 2020 that the production of the 747 will end in 2022.

As of June 2020, according to Cirium fleets data, there were only 171 passenger versions of the 747 still in fleets worldwide, and only 27 of them were in use. The airlines (British Airways, Lufthansa, KLM, Qantas) have mostly this passenger version of the 747 in their fleets and as such they quickened the retirement processes of these aircraft, which are normally planned to

last until the mid-2020s. In the aftermath of the pandemic, it seems quite unlikely that we would travel with the 747.

Emirates may be the only chance for the A380!

Airbus dropped a bombshell with the announcement made on February 14, 2019 for the A380, the biggest failure of the European manufacturer in recent years. The news that the A380 production line will be shut down in 2021 was a like an awful Valentine's Day gift for A380 lovers. The declining demand of airlines for this aircraft was the major factor behind this decision. Even Emirates (the biggest customer of the aircraft) wished to cancel or shift its remaining orders to another model and this forced Airbus management to make this decision.

The pandemic almost legalized this decision that was made for Airbus 380. Airlines having A380s

in their fleet have stored the A380s and started to schedule the removal of them from their fleet.

242 of the A380s, which had received only 251 orders until today, were delivered to their owners. 123 of these deliveries were made to Emirates. Of the remaining 9 orders, 8 will join the Emirates fleet and 1 will join the All Nippon Airways fleet.

The Emirates, which alone owns almost half of the entire A380 fleet worldwide, announced that it would tear down 46 of the aircraft to use for spare parts. Thus, it had to lay off thousands of cabin attendants. In short, Emirates' gamble for A380 failed. Billions of dollars were lost. Emirates plans to continue operations with the A380s until the mid-2030s.

Other important customers other than Emirates, such as Air France, Qatar Airways, British Airways, Qantas, Singapore Airlines, Lufthansa, Korean, Malaysian and Asiana

have also decided not to fly with A380s after the pandemic.

For those who want to fly with an A380 after the pandemic, they most likely will make their way to Dubai. It will be possible to fly with an A380 on all Nippon Airways' Tokyo-Honolulu flights and China Southern Airline flights from China to some of Europe's major cities. You may have another chance to come across a charter flight operated with an A380 by HiFly, the world's only airline that has a second-hand A380.

The pandemic is the final nail in the Airbus A340's coffin!

For many, it is probable to attribute the gradual decline in A340 use in recent years even to the fact that a transatlantic flight takes at least an hour longer due to its slow speed. Increased operational and maintenance costs of A340s fleets had already started to become a burden.

The year 2008 took its place in history as the year in which A340 aircraft were used the most across the globe. With 206 thousand flights in 2008, A340 aircraft were conducting an average of 560 flights per day worldwide. In 2008, 43 operators across the world had the A340 in their fleet and this enabled their prominence and popularity in 2008. Lufthansa, the biggest operator of the A340, conducted 31,200 flights with A340 aircraft in 2010, while the number of flights fell to 14,500 in 2019. With the pandemic, A340s commenced their final and permanent descent. It is not difficult to foresee that giants such as Lufthansa, Iberia, Air Canada, Virgin Atlantic and Singapore Airlines will not conduct passenger operations with these aircraft in the aftermath of the pandemic. Many of A340 operators have already sent the aircraft in their fleet to aircraft graveyards.



Out with four-engine aircraft, in with new generation twin-engine aircraft

Demand for the 747, A380 and A340 have gradually dropped in recent years. With the destructive impact of the pandemic, 4-engine jumbo jets will be decidedly replaced by new technology, such as the new generation twin-engine aircraft.

The dominance of twin-engine alternatives in the market instead of four-engine jumbo jets will

create positive effects for all stakeholders in the industry. Along with the substantial reduction in maintenance costs, another important aspect is that the size of areas necessary to maintain the planes will also be reduced. When we combine the perception of efficiency and the decrease of environmental concerns with the economic benefits it will bring, it is not difficult to predict that the process will lead to positive outcomes at every point of the chain. It's not hard to understand why 4-engine aircraft are going to be replaced by

twin-engine aircraft; it is evident from the number of orders placed by airlines worldwide for new generation twin-engine aircraft.

Even though the demands of airlines determine the manufacturers' decision to continue or discontinue production for any model, airports are also amongst the main factors that determine the demands of airlines. Connection and capacity problems emerged and were underestimated especially at airports in Europe before the pandemic, but in fact it's a very significant factor in shortening of the lifespan of 4-engine aircraft.



What benefits will new generation twin-engine aircraft provide?

Shifting to new generation twin-engine aircraft is likely to minimize many of the aviation industry's problems. Three basic conclusions can be drawn from the scenario of the removal of four-engine aircraft: with a smaller and more efficient aircraft, flight frequency can be increased, aircraft ground time can be minimized, and on account of all of these factors capacity can be increased and eventually income.

Capacity problems are a critical issue for airlines, which can result in considerable pressure after a while. There are various factors that create capacity crises for airlines, from geography to finance, from airport footprints to environmental concerns. Air traffic management and outdated slot allocation schedules also contribute to capacity crises. The increasing popularity of new generation twin-engine aircraft designs seems to be the most important solution for airlines to overcome capacity crisis challenges in the future.

Smaller and lighter aircraft make connections faster and easier between relatively small regional airports and large hubs.

Thus, airlines can increase their mobility between airports and connect regional airports, which can be a vital source of income, to each other and to hubs more easily than ever before. The new generation twin-engine passenger aircraft contributes to this process positively, enabling airlines to use all the facilities they have in a much more efficient way.

How to achieve the performance of four-engines with twin engines

With the shift to twin-engine aircraft from 4-engines, each improvement step in which existing capacity is optimized brings along other advantages to the business world, passengers and airports. It also contributes to

the efficiency of the infrastructure.

One of these advantages is the increase in runway utilization capacity. The wake turbulence formed by large aircraft will disappear, just a negligible effect will occur between landing and take-off. This will potentially result in many more aircraft being able to use the same runway during the same time period. Even this move will increase capacity at airports without the need for major infrastructural changes.

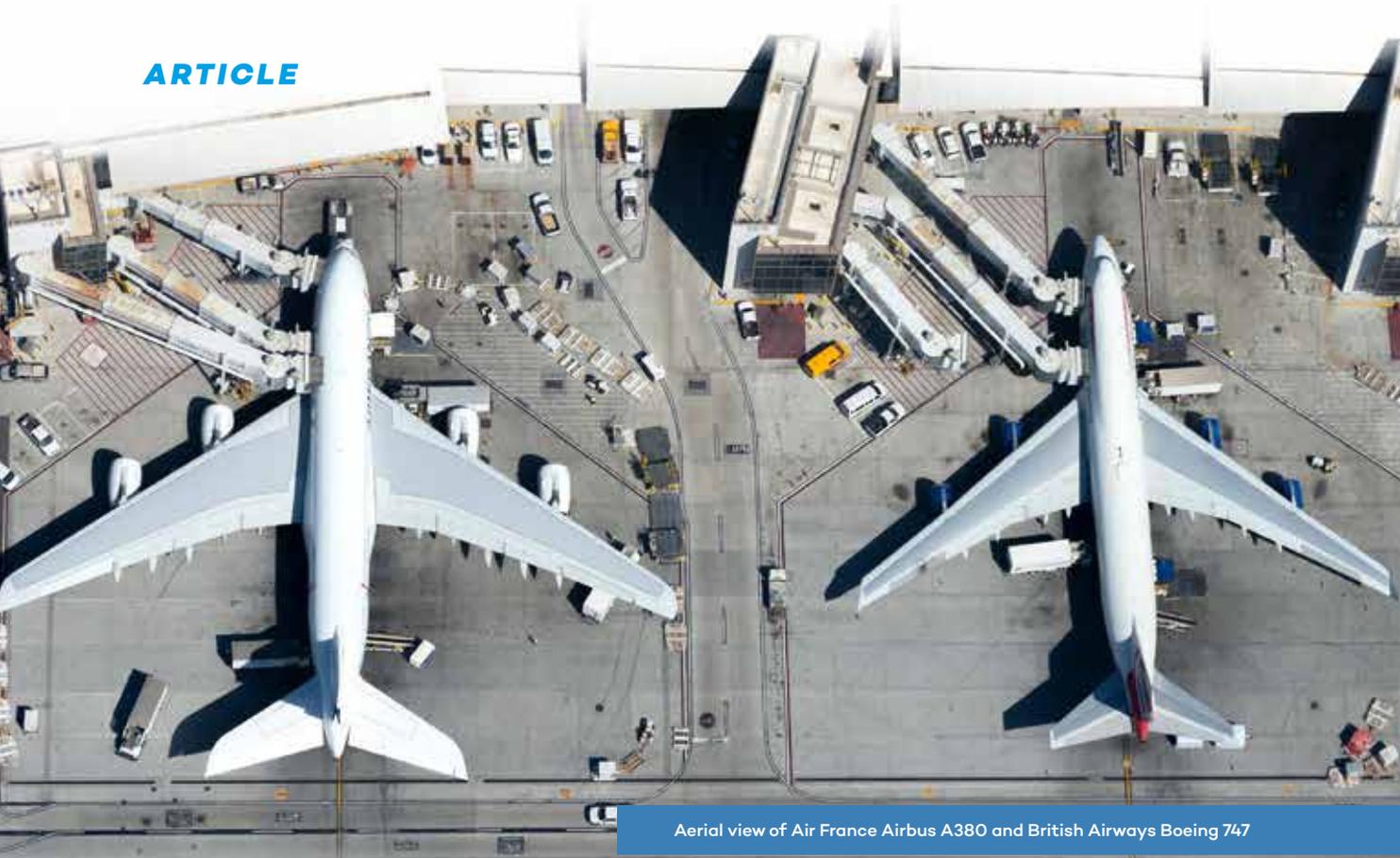
From the perspective of sustainability, the advantages to be provided are crystal clear. Thanks to the increased efficiency and fuel-saving features of twin-engine aircraft equipped with new generation technologies, it will be much more probable for the industry

to reach its environmental targets and the zero-emission vision that is set to be reached in 2050.

Another important factor speeding up the transition to twin-engine aircraft are the changes in aviation regulations. With the ETOPS rule took effect in the 1980s, airlines were building their flight routes in a way to position an airport where they could land within a maximum 90 minutes in case of emergency. As engine technologies advanced, these regulations were eased and the range that twin-engine aircraft could fly was expanded. Thus, routes that were never considered before could be established.

Today, both the aviation industry and the world are more sensitive about fighting against climate change, so it





Aerial view of Air France Airbus A380 and British Airways Boeing 747

was impossible for these aircraft not to become popular due to the shorter routes, allowing for less fuel consumption and more environmentally friendly flights.

Boeing 747 will continue for air freight

Very few industry branches are seeing as much rapid change and transformation as the aviation industry. The dynamics and rate of change in the aviation industry are constantly evolving through technological developments and fluctuating market conditions. There has been a reduction in the difference between the

time various aircraft types are put into service and the time they are removed from service, an increased rate of consumption. The A340, for example, was put into service by Lufthansa in 1993, and today A340 operations will not go beyond the 2020s. However, the A380 reached the end of the road rather quickly after a journey that had only just begun in 2007.

New aircraft, long-haul flights, ultra-long-haul flights, point-to-point flying are all part of the 10-year projections and possible roadmap of the aviation industry. It seems rather unlikely that the 747, A340 and A380 will play any significant part in future-plans.

The pandemic sounded the death knell for the four-engine passenger aircraft. Even from the simplest point of view, this idea is popular in the industry: Why do with four what you can do with two? Thus, things are both simpler and cheaper. Not to mention the positive environmental impact it creates!

To end with a pleasing development, we have the chance to see Boeing's iconic jumbo jet 747 in the sky for a while longer, because Boeing believes the 747 still has a future in the cargo business, even as the possibility of carrying passengers decreases.

Even though the transformation of the A380 from a passenger plane to a cargo configuration, the process of which has been initiated for the first time for an unnamed customer during the pandemic, the cargo version of the A380 is not expected to become widespread in the long run.

In summary, we, as passengers, are seriously losing our chances of traveling with 4-engine airplanes due to the pandemic. I hope you can experience flying in jumbo jets before they become another addition to Aircraft Boneyards worldwide, joining out of service aircraft, taking their place in the dusty pages of history 🌐