

Boeing 737 MAX Vs. Airbus A320neo: Which Aircraft Gets More Miles Per Gallon?

 By Aaron Spray — Published 2 days ago

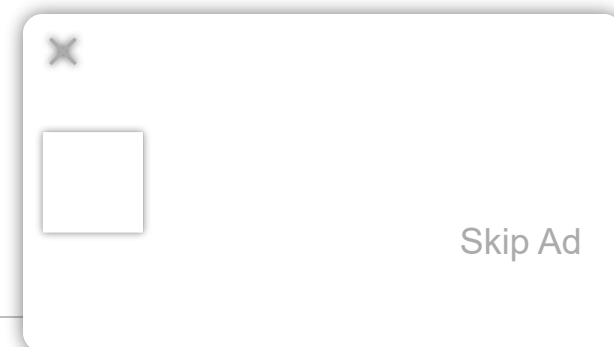


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Between the popular A320neo and Boeing 737 MAX families, the A320neo has an edge in efficiency. Among the three engines, the A320neo's engine is the most efficient, followed by the 737 MAX 8's engine, and then the 737 MAX 7's engine.




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explaining why the A320neo and the LEAP-1A engine are the more popular options for airlines today.

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Meanwhile, as  **Boeing** continues to focus on bringing its remaining two MAX variants into service, Airbus is reportedly already working on a next-generation single-aisle replacement for its Airbus A320 family aircraft. As of mid-2025, only the Boeing MAX 8 and MAX 9 have their FAA-type certificates, with certificates for the MAX 7 and MAX 10 still pending.

Airbus A320neo Has Bigger Engines



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The Boeing 737 MAX and A320neo families dominate the narrowbody commercial airliner market. The CFM International LEAP-1B turbofan exclusively powers the Boeing 737 MAX family, while the CFM LEAP-1A or the Pratt & Whitney PW1100G-JM optionally po



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According to MTU Aero Engines, which maintains and overhauls CFM and LEAP-1A-JM engines, there are some significant differences between the -1A and -1B engines. The LEAP-1A engines on the A320neo family are significantly more powerful, providing 35,000 lbf compared to the LEAP-1B's 28,000 lbf. They also come with a higher bypass ratio of 11:1 to 8.6:1 for the -1A and -1B, respectively. Another performance difference is the overall pressure ratio, which is 40:1 and 41:1 for the -1A and -1B.

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Physically, there are differences too. The MAX's LEAP-1B engines have flat bottoms to enable them to have enough ground clearance as the Boeing 737 is an older 1960s design sitting closer to the ground and was designed when engines were smaller. The A320neo's LEAP-1A engine measures 11 feet in length, 8.3 feet in width, 7.8 feet in height, and weighs 6,600 lbs. The 1B measures in with a length of 10.3 feet, a width of 7.9 feet, a height of 7.8 feet, and weighs 6,600 lbs.



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The Airbus A320neo's CFM LEAP-1A Has The Advantage



Of the three engine types, the CFM International LEAP-1A is generally considered to be marginally more efficient. It is also estimated to have slightly lower maintenance costs compared with the PW1100G. It should be noted that determining which is definitively more efficient



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normally considered to have a slight edge in overall efficiency and operational costs.

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This slight edge is seen in that the LEAP-1A is the more popular choice for the Airbus A320neo family. However, it is not so decisive that airlines don't also select the PW1100G-JM. Writing in 2020, AirInsight wrote that while the competition between the CFM and P&W engines is close, the CFM LEAP engine is clearly doing better on the A320neo. However, it is not a clear-cut case, as it points out that the P&W engine has a better fuel burn and does better on the larger A321neo. But even this is contradicted in other sources that claim the P&W engine is 1% less efficient on the A321neo.

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	Airbus A320neo's LEAP-1A	Boeing 737 MAX's LEAP-1B:
Max thrust:	35,000 lbf	28,000 lbf
Bypass Ratio:	11:1	8.6:1
Overall Pressure Ratio:	40:1	41:1
Length:	11 feet	10.3 feet
Weight:	6,632 lbs	6,128 lbs

The LEAP-1A appears to have increased its market share on the A320neo over time. In 2016, the LEAP-1A had a 55% market share for A320neo engine orders. In 2022, it was reported that the LEAP engine had a 72% market share in the narrowbody market, with a 60% market share of A320neo orders. By 2024, the LEAP was selected for 75% of A320neo orders. One of the main factors for the shift is that the LEAP-1A is considered to have proven itself to be the more reliable engine.

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The Airbus A320neo with LEAP-1A engines is overall the most fuel-efficient, getting 0.682 nautical miles per gallon. This is slightly ahead of the 0.676 nautical miles per gallon that the Boeing 737 MAX 8 achieves. As stated above, according to AirInsight, the LEAP generally offers a better efficiency based on cost per seat hour compared with its P&W counterpart. The LEAP-1A generally has a 1-2% fuel burn advantage, although this depends on various factors.

When it comes to larger aircraft in the class like the Boeing 737 MAX 9 and the Airbus A321neo, there is, predictably, a drop-off in efficiency as their larger size requires higher fuel burn rates. These aircraft get around 0.569 to 0.625 nautical miles per gallon. Data from AirInsight suggests the Airbus A320neo has a fuel burn rate of around 668.4 gallons per hour. This is around 660 gallons per hour with the LEAP engines and 3 with the P&W engines.



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Airbus A320neo:	668.4 gallons
Airbus A321neo:	788.2 gallons
Boeing MAX 8:	664.3 gallons
Boeing MAX 9:	720 gallons

The larger A321neo gets around 788.2 gallons per hour, with the LEAP achieving 780 gallons per hour and the P&W getting 790 gallons. When it comes to the Boeing 737 MAX, the MAX 8 achieves a fuel burn of around 664.3 gallons an hour (around 4,460 lbs per hour while cruising). This makes it very close to the A320neo. It is harder to find specific estimates for the MAX 9, but it is believed to be around 720 gallons per hour based on its larger size and other estimates.

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It seems the next generation of narrowbody engines will look like turboprops. CFM International is working on the RISE Program that will serve as the foundation for the next CFM engine generation. It is operational in the late 2030s and plans to improve fuel efficiency.



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The new engines would be able to run on sustainable aviation fuels (SAF) and hydrogen. The engine is currently undergoing ground tests, and when the time comes for aerial tests, a fully functioning engine will be fitted to an A380 flight test aircraft in Toulouse in southern France. Airbus has already begun the process of modifying the Superjumbo to carry the test engine.



Looking into the future. Boeing will eventually replace the

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much more pressing concerns. Airbus is already working on replacements for the A320neo. One will be a small hydrogen-powered aircraft able to fly 1,000 miles, while the second (more direct replacement) will be a short-to-medium range aircraft with a larger wingspan and will be designed to carry the next generation engine.

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Efficiency Is The Name Of The Game



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There are massive pressures on the aviation industry to increase the efficiency of aircraft. Perhaps the leading factor is that fuel is one of the greatest costs of any airline, and reducing fuel consumption reduces overall costs. But there are also regulatory factors where older, noisier, and more polluting aircraft are being more tightly regulated at some airports. Amsterdam's Schiphol Airport.



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has given a five-year reprieve until 2033, this is only for the

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Meanwhile, the industry is focusing on increasing efficiency. CFM is working on developing the next-generation open fan engine for the next generation of narrowbody aircraft.

At the same time, Airbus is experimenting with other ways to increase efficiency, including developing hybrid electric aircraft. Perhaps the most notable project in development is JetZero's Z4 blended wing body aircraft.



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A Convergence Of Advantages



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[Link copied to clipboard](#) The Airbus A320neo with CFM International LEAP engines is generally estimated to be more fuel efficient than its Boeing 737 MAX counterparts or other P&W-equipped A320neo aircraft. That said, the MAX 8 and A321neo are very close. But while the greater efficiency of the LEAP-1A engines is an important factor in why the A320 family and the LEAP-1A engines are more popular, it is not the only factor.

Airlines have also been favoring their Airbus A320neo aircraft to have LEAP-1A engines because they have proven more reliable. India's IndiGo has recently had major issues with its P&W-equipped A320neo family fleet. These engines were found to be faulty and many had to be grounded for costly repairs.

Meanwhile, much of the reason why the Airbus A320neo family enjoys a larger orderbook than the Boeing 737 MAX is due to the MAX crisis triggered by the crashes in 2018 and 2019. This has had other knock-on effects, like the FAA limiting MAX production rates and withholding the type certificate for the MAX 7 and MAX 10, putting the A320neo at an even greater relative advantage.



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Airbus A320neo

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Leo

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The A320 neo enjoys a larger orderbook because it came to market earlier (Boeing were caught catnapping) and because all things considered it is a superior aircraft, especoally when it comes to the 321 (all variants), which is in a league of its own. Airlines continued to order the max during its crisis so I am not sure whsat impct that had on the order books. At the end of the day what airlines care about the most is economics and the max is still a very good proposition.

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martyn

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Another advantage of the Leap 1A against 1B is due to the larger fan and turbine blade size it runs as a slower speed so less stress on the components.

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The MTO thrust for the 1A varies between 10,620 and 14,305 daN, depending on the model, while it ranges from 11,127 to 13,046 daN for the 1B

These last missing 10% may well explain the long take-off runs of the MAX-9 and MAX-10

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Anybody feels that the 737NG and 737Max is more comfortable because it has a more modern looks and feels than the airbus A320neo?

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Ortberg's decision to add on one production line dedicated to the MAX-10 will drastically reduce the delivery time of the 737, which [Link copied to clipboard](#) their commercial arguments

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@AYplat The MAX-10 FAL is still far from being operational, so that should not be a problem

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How many whilte-tails they can store while waiting for the certificate?

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... have not heard anything about a third Airbus FAL in China - the second one is only due to open end of 2025 or early 2026 and was already necessary to reach the 75 A320 / mont target

And Airbus inaugurated an FAL in Toulouse in 2023 and have, I believe, no intention of upping their game

(Edited)



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**martyn**

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Airbus is opening new production line in Toulouse another in Mobile and a 3rd in Tianjin.



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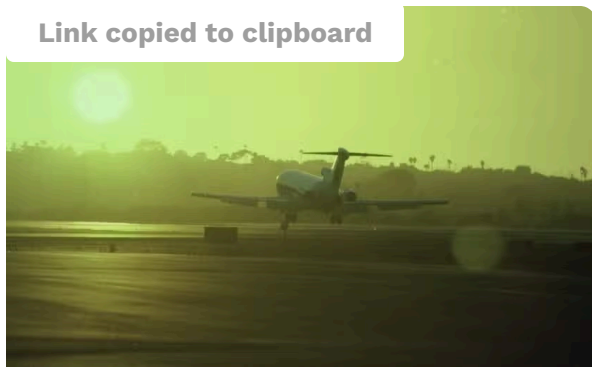
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