

Differences between the A320 and A319

Now that the FSLabs A319-X has been released, it is a good idea to have a look at the major differences between the A319 and A320 variants.

	A319	A320
<u>Dimensions:</u>		
Length	33.84 m	37.57 m
Height	11.75 m	11.75 m
Wingspan	34.10 m	34.10 m
Distance Nosegear to Main gear	11.04 m	12.64 m
Turn Radius	12.11 m	13.81 m
Minimum Pavement width (180° turn)	20.64 m	22.90 m
Tail Clearance (Tailstrike)	13.9°	11.7°
Max Takeoff Weight	70000 kg*	73500 kg*
Max Landing Weight	61000 kg*	64500 kg*
Max Zero Fuel Weight	57000 kg*	61000 kg*
Vmo/Mmo	350 kt/0.82M	350 kt/0.82M
<u>Systems:</u>		
Speedbrakes with AP on	Full spoiler deflection	Half spoiler deflection
Max Rudder Deflection	30°	25°
Doors and Exits	4 Doors and 2 or 4 Overwing Exits	4 Doors and 4 Overwing Exits
Cargo Doors	Fwd and Aft Door but no Bulk Door	Fwd and Aft Door and Bulk Door
Engines	CFM 56-5B7 IAE V2524-A5	CFM56-5B4 IAE V2527-A5
Thrust Ratings	CFM 27000 lbs IAE 24800 lbs	CFM 27000 lbs IAE 26600 lbs

* values might differ depending on certification

Those are the major differences regarding dimensions and some systems. Otherwise the A320 and A319 are very similar. And you would expect that since pilots may have to fly both variants on the same day in normal operations.

So lets now look at some operational aspects.

Looking at the CFM variants, you can see that both have a thrust rating of 27000 lbs. So there would definitely be a different feel to flying a lightly loaded A319 and a fully loaded A320. In this case the power surplus on the A319 would be felt especially during descent, where it will tend to descend shallower at idle power. Hence leave yourself a little more room unless you like using the "lever of shame", which is more effective in the A319 with autopilot on because of the flight spoilers extending fully, instead of half way on the A320.

Of course you would also need to be careful on the final approach when not much headwind is present. The VLS will be very low on a light A319, it can be well below 120 kts in some cases. So the aircraft will need to lose more kinetic energy and hence the deceleration has a longer way to go. Lowering the landing gear at 2000 ft above ground (which is mostly done at that point) could lead to stabilization criteria not being met at 1000 ft AGL, requiring a go-around.

Another thing you will notice is that the A319 is influenced a little more by wind. The A319 tends to be more sensitive around the vertical axis and hence yaw more. This is due to the shorter fuselage and the moments being different to the A320. So needless to say, when you have a thrust loss on one engine, the rudder input has to be more aggressive in the A319. That is also why the maximum rudder deflection in the A319 is 30°, instead of 25°.

Regarding the landing technique, the following can be said: the A319 has the same wing area as the A320, but will generally be lighter than the A320 during landing. This also means that the ground effect will be a little more noticeable leading to more of a flare tendency. For this reason pilots usually flare the A319 a little later (at ~ 20 ft).

During taxiing the A319 will also feel a little more receptive to steering inputs because of the lighter weight and smaller distance between the nose and main gear.