

AGA-33: The Secret of its Performances

The airplane of the future will come from a virtuous circle: Because it has less drag, it will be more fuel efficient, and will carry a lot less fuel. With less weight, it will need a smaller wing and lighter engines which will make it even ... lighter, more aerodynamic and even more fuel efficient.

SIZE: It's a larger aircraft in span and length than a Boeing or Airbus of the same class, but its wetted area and wing area are smaller by 30%.

WING GEOMETRY: It is an almost perfect ellipse, giving it a 95% wing efficiency.

The FUSELAGE: Is completely streamlined to reduce drag and wetted area. The ovoid shape is also more resistant to pressurization and load stresses.

The TAIL: Is "V" shaped to keep it out of engine wake, and to reduce wetted area by eliminating the vertical fin.

COMFORT: The concept is to exchange ceiling height for legroom, hence the partial upper deck at the thicker point of the fuselage. Economy passengers will benefit from 40 inches seat pitch, the equivalent of a premium class. Overall, the aircraft will seat 251 and have room for 14 kid beds.

The AILERONS/FLAPS: Are plain and all identical. The pilot can use them to reduce drag in cruise or to improve lift at slow speed. They can also be used to twist and untwist the wing to make the aircraft more efficient in calm air or safer in turbulences and landings.

The ENGINES: They are smaller and lighter, but give sufficient power because the aircraft needs much less thrust.

The WINGS: They are long and thin (high aspect ratio) and help reduce the drag in a spectacular fashion. They are also smaller in area and volume than those of a conventional aircraft.

RANGE: 4600 miles at 468 mph

FUEL BURN: Is its strong point. With a L/D of 33 and a 122-ton weight, this aircraft will need 8200 lbs. of thrust to cruise at 460 mph. The fuel burn is 4500 lbs. of jet fuel an hour, or 190 miles per gallon per passenger, same as a small hybrid car. A classic jet carrying the same load will burn twice as much.

NOISE: With its refined aerodynamics and modern engines, this aircraft will be discreet on take off, and virtually silent while landing.

