A new Device to Make Planes more Efficient

A cylindrical device with helicoïdal slot at the plane's wingtip could improve its aerodynamic properties and consequently diminish kerosene consumption. Given the current huge increases in air transport, such a device could significantly reduce CO_2 emissions.

The number of commercial passenger flights is currently rocketing, with the prospect of the increase speeding up still further during the next few years. Consequently, even if aviation is today not a major contributor to CO_2 emissions, its share of total human emissions is expected to grow in the coming years and could reach 5% by 2050 according to the Intergovernmental Panel on Climate Change.

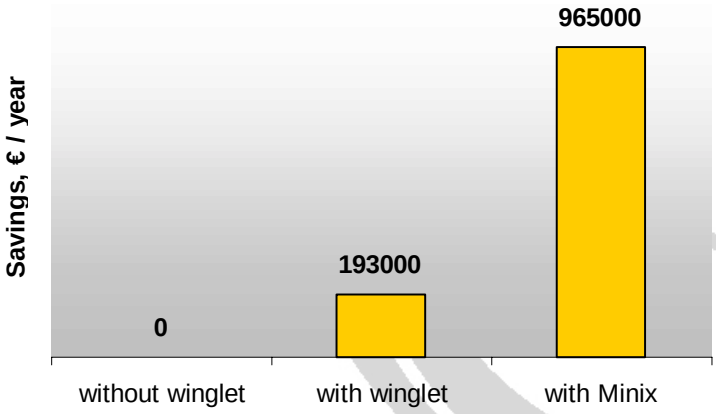
The Commission considers including aviation in the Carbon Trading Scheme

In order to anticipate a probable rise in CO_2 emissions from aviation, the European Commission has proposed including aviation in the European Emissions Trading Scheme.

For more information about aviation and climate change see Europa

Winglets are devices on the tip of an aircraft's wings which reduce drag and therefore kerosene consumption. Such devices have now been used for several years on commercial planes. A new cylindrical winglet with helical slot has been invented in France that is approximately 5 times more efficient than current winglets.

Estimated savings in kerosene consumption for Airbus A340 to Mach 0.8



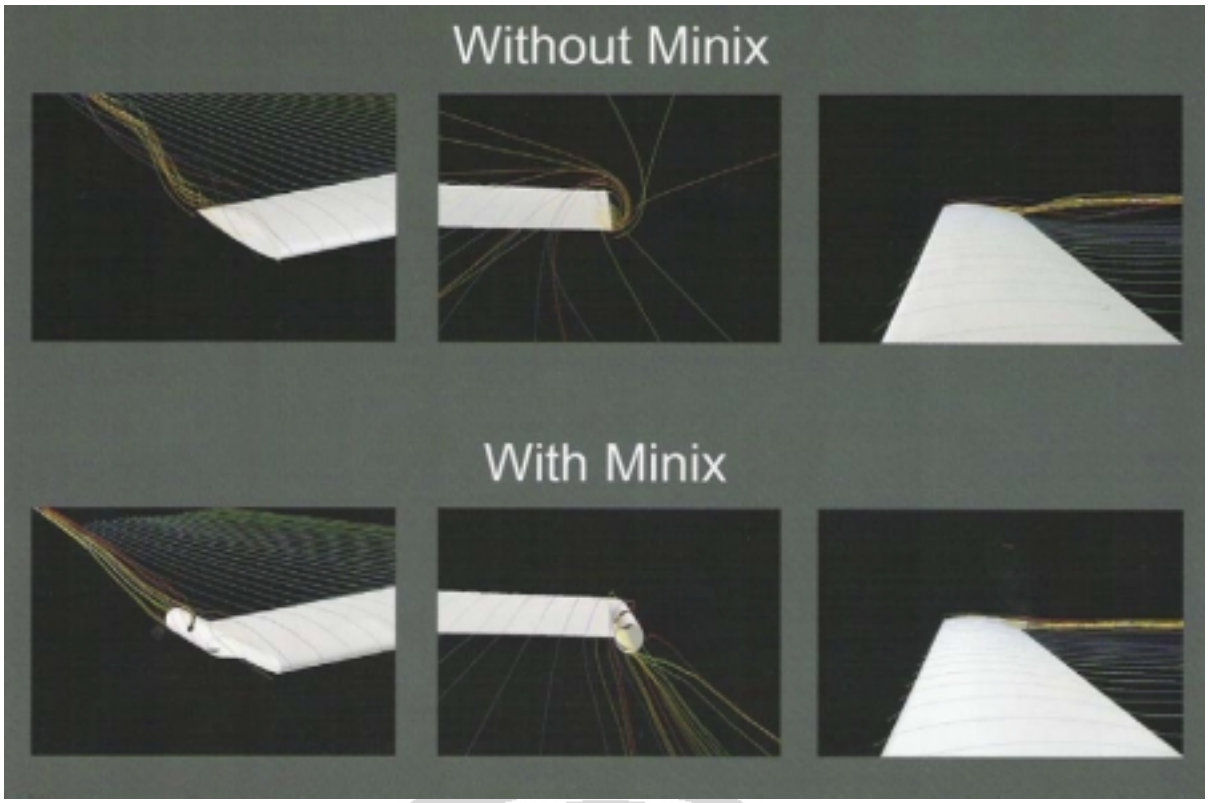
The device smoothes the aircraft's progression in the air by reducing induced drag, wingtip vortex and increasing the lift-drag ratio. The main consequence is a reduction in kerosene consumption (see graph). Based on the price of current winglets, return on investment could take a maximum 2 years with kerosene prices as of April 2007.

Moreover, it reduces significantly the air movement created by the plane, reducing inconvenience for the plane following it – for example in landing phases. This could ease the management of airport landings and minimize useless kerosene consumption while planes are waiting to land.

Apart from planes' wings, this device can be adapted to a range of profiles such as helicopter blades, wind turbine blades, submarines, rudders, with a main consequence of improving the movement in the media by reducing air or water resistance. It can be used inversely for racers cars.

The patented device is still being improved by the French inventor, with a second more efficient version under development. Several possible commercial applications are under discussion, mainly with a US light aviation manufacturer and with a French wind turbine firm.

Simulation of air movement around the blade with and without the device. Colored lines show air movement.



The Minix device

Sources: www.minix.fr

Additional information has been kindly furnished by Christian Hugues.

Contact: Christian HUGUES tel. +33 6.26.21.54.12

christian.hugues@minix.fr