



IS JET TRAVEL BECOMING THE DIRTIEST WAY TO CROSS THE PLANET?

Audio slideshow transcript: Reducing the carbon footprint of planes

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Early aeroplanes were made from light materials like wood and fabric. But to carry more than a couple of passengers, you need a strong airframe. And until recently, that meant using metal, which is heavy. A fully loaded Boeing 747 weighs in at a staggering 397 tonnes.

But in the last few years there's been a huge growth in lighter, stronger materials. There are now plastics reinforced with carbon fibre that are strong enough for use in commercial airliners. The Boeing 787 Dreamliner was the first plane to be built mostly using these composite materials.

It's not just about materials. Over the last 20 years, the fuel efficiency of aircraft engines has improved each year by 1%. That's mainly down to their turbine blades – modern engines contain as many as 68 of them, each one capable of generating as much power as a formula one racing car.

But however quickly aircraft design improves, there's a big catch. Aircraft stay in service for decades. We need to change the way planes operate too.

Some airlines have managed to cut their fuel bills by 10% just by making sure their planes fly at the optimum height for as long as possible. Even tiny changes can make a big difference. Lighter dinner trolleys and serving trays can cut 36 kilograms from a plane's weight. That might not sound like much – but every kilogram saved means 80 metric tonnes less carbon dioxide pumped out by that plane each year.

All these changes mean that aircraft are now more fuel efficient than ever before. But any carbon savings are more than offset by the rapid growth in passenger numbers. If we're going to reduce the carbon footprint of air travel, we're going to need a more radical solution.

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