

Good Health

Revealed, deadly risks for children too small to use plane safety belts

THE SAFETY video is chilling. It shows a young child aged around four, sitting on an aeroplane seat restrained by a lap belt. The aeroplane is about to crash, but the child is too small to adopt and hold the 'brace' position.

On the point of impact, the upper part of his body flips upwards, then forward and down, smashing his head onto the front of his own seat at around 30mph. The lap belt — designed for adult passengers, not small children — is virtually useless.

In an adult, the heaviest part of the body is the pelvis area — the part held in place by a lap belt. In a small child, the chest and head are the heaviest. This means that on impact they will move the most and fastest, yet are not restrained by any harness.

In this case, the video is a simulation, carried out by the American Federal Aviation Administration (FAA) as part of a massive research project into the safety of child restraints on board aircraft in the event of sudden turbulence or a crash. But sadly, earlier this year, that simulation became a terrible reality.

In April, six-year-old Thomas Horne, from Surrey, was the only fatality on board a light aircraft which crashed on take-off in Venezuela. His parents and eight other adults who were wearing lap belts escaped with minor injuries, while Thomas, who was also wearing a belt, died almost instantly from severe head injuries.

Though accident investigators have yet to make a full report, it is probable that had Thomas been strapped in by a four-point restraint (holding him across the waist and the chest) more appropriate for his age and size, he'd have survived. Instead, his death has thrown the spotlight on an issue which has been argued about in the aviation world for years: are infants and young children adequately protected when they fly?

The law states that if you carry a child under 40lb in your car (roughly until the age of four), they must be strapped into a four-point harness within a protective shell — i.e. a child car seat.

OLDER children must be restrained with at least a three-point standard seat belt and use a booster seat appropriate for their weight and height. If not, the driver would be prosecuted — with good reason.

Infants and young children (and even most adults) do not have the strength to prevent their upper body whipping forward in the event of a sudden halt, so a shoulder restraint is essential.

Logically, on board an aeroplane, which is travelling at 300mph, and even when landing at around 100mph, the same laws of physics apply. Which is why passengers are asked to adopt the brace position in the event of an emergency.

But airlines still do not have to provide, by law, any extra restraint for young children. Instead, they either use belts that aren't suitable or sit on a parent's lap — with potentially tragic circumstances.

The situation has for years infuriated those involved with airline safety. 'Children are the most vulnerable passengers on planes, yet they are the least protected,' says Roger Hardy, of the Cranfield Impact Centre at the University of

Cranfield in Bedfordshire. He has led a series of Civil Aviation Authority and EU-sponsored investigations into on-board restraints for infants and young children.

'The chances of surviving a plane crash have never been higher — but those odds only apply if you are safely secured into your seat,' he says. 'The point is, it's time to get children off laps on planes. A child sitting on the lap of an adult, held only by a seat belt looped around their waist, is not given adequate protection in the event of severe turbulence, a dive or a crash.'

'The law only says babies should be restrained in this way during take-off or landing or when the captain switches on the seat belt sign. People often say they could hold on to their babies should the unthinkable happen, but this is a myth.'

'Our research has shown the G-force exerted on a child in even a mild-to-moderate dive can multiply its body weight. So a child weighing around 30lb could end up weighing 150lb — around 10st. No parent can hold on to their child in those circumstances.'

'Another danger is that parents are advised to adopt the brace position over the infant in the event of a crash landing. In that situation, our tests showed that the baby

became little more than a human airbag.' And it's a horrific scenario borne out by aviation history.

In 1994, a U.S. Airways plane crash-landed in North Carolina. On board were a mother and baby. The mother, who was wearing a seat belt, received only minor injuries. But her nine-month-old baby, who was sitting on her lap, suffered fatal head injuries.

In 1998, a stewardess of a United Airlines flight which was about to crash-land instructed four mothers who had babies on their laps to put their infants on the floor in the final moments before the crash. All four babies survived, although one died afterwards from smoke inhalation.

That stewardess, Jan Lohr, later became one of America's leading campaigners to outlaw infants sitting on laps and, as a result, in 1998 the FAA instigated the highly successful Turbulence Happens campaign.

But if a more suitable child restraint such as a car seat is used, it has to be strapped into an airline seat, and children on laps usually travel for free. While there was a time when many airlines offered half-price seats for infants under two, with airlines struggling to survive, these have all but vanished.

But it's normal today in America to see parents carrying car seats through check-in. It's also common to see young children restrained in a four-point harness — the one endorsed by the American authorities is known as CARES and is available online in Britain.

The bottom of the CARES harness attaches to the existing lap belt and the top to a separate seat belt. The harness is fitted around the back of the child's seat and fits virtually all aircraft seats.

BUT WE rarely see it used on planes over here. Indeed, in the UK and Europe the whole issue has hardly raised a ripple of concern among aviation authorities.

Despite the findings of scientists such as Roger Hardy, and although CARES and carry-on car seats for children are endorsed here, the Civil Aviation Authority (CAA) still insists sitting on a parent's lap is perfectly adequate.

'We are satisfied that safety belts used on UK-registered commercial aircraft offer satisfactory protection for children,' says Richard Taylor, spokesperson for the authority. 'Statistics bear this out.'

According to the CAA, in 2008 around 235 million passengers flew to or from UK airports. Over that period, there was only one



He's the most precious cargo on board. So why do airlines put his life in danger?

recorded incident of a child being injured due to turbulence. But as Mr Hardy points out: 'That's like saying just because you've never had a car crash, you don't need to wear a seat belt.'

And it seems many of our airline staff agree. 'I dread it when I see infants coming on board my plane, knowing they will be sitting on laps,' says one commercial pilot who asked not to be named.

'Yes, there is technology which tells us when we are likely to hit turbulence. But sometimes you just can't see danger coming and you may have to take the plane into an immediate dive, roll or — God forbid — a crash-landing, and anyone not properly strapped in is much more likely to get hurt.'

The obvious solution would be for all airlines themselves — as Virgin does — to provide seats for infants, or provide four-point harnesses that hold small children securely. But some argue this would be expensive and add to the cost (and weight) of flights.

In these economically straitened times, would parents used to paying nothing for their baby to sit on their laps really want to pay for a separate seat for their child?

The answer is probably yes. And as Thomas Horne's parents contemplate a life without their only child, who could possibly disagree?