



Hidden Dangers In Your Car

When everyday objects turn deadly

BY ELIZABETH ADLAM

STEPHEN WALSH, 42, and his wife Amanda pile their three small children into their Fiat Multipla MPV for a six-hour drive, confident it will be a safe trip. Walsh knows they're both experienced drivers and his car has the latest safety features.

But the Sussex boarding school teacher does not consider what's on the floor of the back seat. Or in the boot area. Although everyone is buckled in, they're surrounded by holdalls, cases, picnic gear, shopping,

a laptop, umbrella, even a fold-up buggy. Stephen doesn't give these things a thought.

And why would he? This May Day holiday, millions of cars on our roads will, just like Stephen's, have tested well and feature airbags and anti-lock braking systems, giving the driver a sense of safety. But as MPVs and hatchbacks have multiplied, more and more people have turned their vehicles into second living rooms where hidden dangers abound, from a mobile phone on the dashboard to DIY tiles in the back. It's a recipe for disaster because in a crash, these objects could turn into deadly projectiles.

When we asked vehicle safety testing experts TNO Automotive to simulate a 30mph head-on crash using an MPV filled with luggage like the

Walshes', the results were horrifying.

"In one test, the laptop computer flew forward, striking the driver, who would have been killed by massive skull trauma and brain injury," says TNO UK's safety expert David Moseley. "The baby buggy cracked into the head of the front-seat passenger, causing serious, possibly fatal, injury."

The motor industry has known about these dangers for years. As far back as 1986, General Motors engineers were warning that passengers and drivers could sustain serious injuries from unsecured cargo.

One April evening four years ago Raymond and Pauline Harris were driving home from holiday along the A31 in Dorset. Their Peugeot 106 hatchback was stacked with duty-free goods and one side of the split rear seat was folded down to make room for two heavy suitcases. Faced with a car coming towards him on the wrong

side of the road, Raymond slammed on the brakes. But it was too late to avoid a crash.

Both Raymond and Pauline were killed, but not as a result of the collision—the Peugeot's passenger

though your seat belt holds you firmly in place, a ten kilo bag will continue travelling forward at that speed, hitting you with the force of half a ton," says Kevin Delaney, traffic and road safety manager with the RAC Foundation.

"Most people just don't realise that loose objects in a car can become lethal weapons in a collision or even emergency braking," says Professor Richard Lowne, safety expert with

the Transport Research Laboratory.

Exacerbating the danger is the fact that the fold-down rear seats in MPVs or hatchbacks are typically less resistant to force than the fixed seats of a saloon car. All rear seats are built to withstand up to 45 kilos—that's equivalent to, say, four full suitcases—shooting forward from the floor of the boot. But when heavy luggage is piled up

In a collision, a can of beans could become a lethal weapon

compartment retained its protective shape. It was the two heavy cases hurtling forward that crushed the couple to death. "The passenger's seat was buckled forwards and the driver's seat was ripped completely free of the runners," recalls Andrew Craig, the police accident investigator at the scene.

"If a car hits a solid object at 30mph,

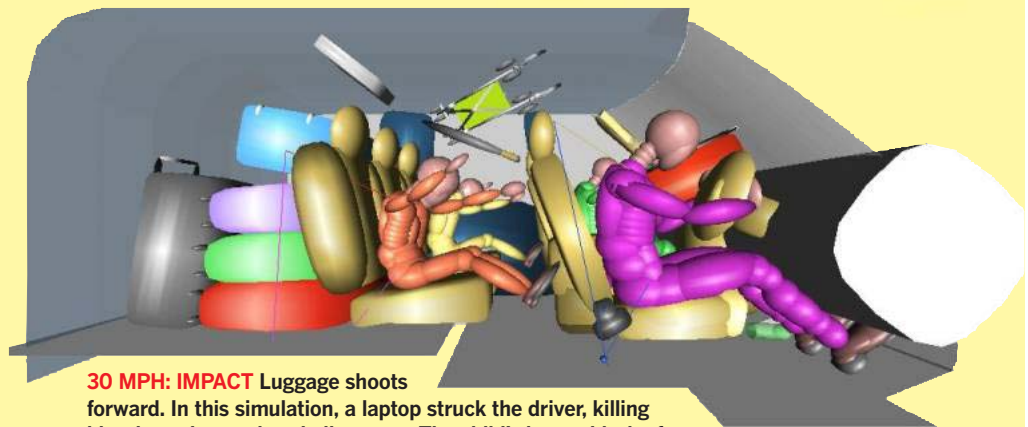
The Crash Test



An average family ready for a journey, their car loaded up. Here's what could happen



50 MPH: PRE-CRASH BRAKING The occupants are restrained by their seat belts, but loose objects in the back start to move



30 MPH: IMPACT Luggage shoots forward. In this simulation, a laptop struck the driver, killing him through massive skull trauma. The child's buggy hit the front passenger, causing serious injury

Crash tests were carried out using TNO's MADYMO computer software, as used by almost all vehicle manufacturers. To see the complete crash test, visit www.readersdigest.co.uk

RD | MAY 2003

high against an MPV's seat back, in a crash or heavy braking it may not withstand the load.

When TNO simulated the crash of an MPV with luggage packed high against the rear seat, the seat gave way, crushing the two child-size dummies strapped in the back.

It isn't just inanimate objects that pose a threat. Unrestrained passengers can be just as lethal. Studies in Britain, Sweden, Japan and the US show

'An unbelted person in the back is a deadly force'

unbelted rear-seat passengers increase the risk of injury and death to others in the car. "An unrestrained person in the back becomes a deadly force," explains Masao Ichikawa, a researcher at the University of Tokyo.

Last year Ichikawa's team studied nearly 74,000 two-car collisions. Researchers determined that the risk of death for belted front-seat occupants rose 400 per cent when someone in the back was not wearing a seat belt. The conclusion: over 740 deaths and severe injuries could have been prevented if back-seat passengers had simply buckled up.

New research carried out for Reader's Digest in the US backs up these findings. Our study looked at accident data for 36,000 frontal collisions in which the driver wore a seat

belt and the passenger directly behind did not and 244,000 frontal crashes with a belted passenger behind a belted driver.

Of drivers with unbelted back-seat passengers, one in 68 was killed, compared with only one in 330 drivers with a restrained back-seat passenger.

"These figures show that if the person sitting behind you unclicks their belt, you're four times more likely to die in a frontal crash," explains Britain's top crash safety expert Murray Mackay, professor emeritus of transport safety at the University of Birmingham.

In Britain last year an estimated 19,500 drivers and passengers lost their lives or were seriously injured.

Experts say that many injuries and deaths are the result of unrestrained cargo, pets or passengers.

In an ongoing US study of children involved in crashes, researchers found that of 12,513 children injured by something inside the vehicle, more than 3,000 collided with loose objects, other passengers or both.

"It's even worse for adults," says Mackay. "Most people have got the message about restraining young children in child seats. But a driver with adult passengers who don't belt up and a car filled with loose objects is raising the odds dramatically against himself in a collision. People still don't understand the risks which arise from unrestrained objects, be they large dogs, toolboxes, suitcases or grannies."

In one crash that Murray Mackay

Hazards in a Box

The average family jumps into their car to make hundreds of trips each year. The result: living-rooms on wheels. It's convenient, but possibly deadly. Be smart. Consider these potential dangers—and travel safely

FRONT SEAT. Mobile phones, CDs, laptops, on the passenger seat; coffee cups on dashboard: all common, all hazardous

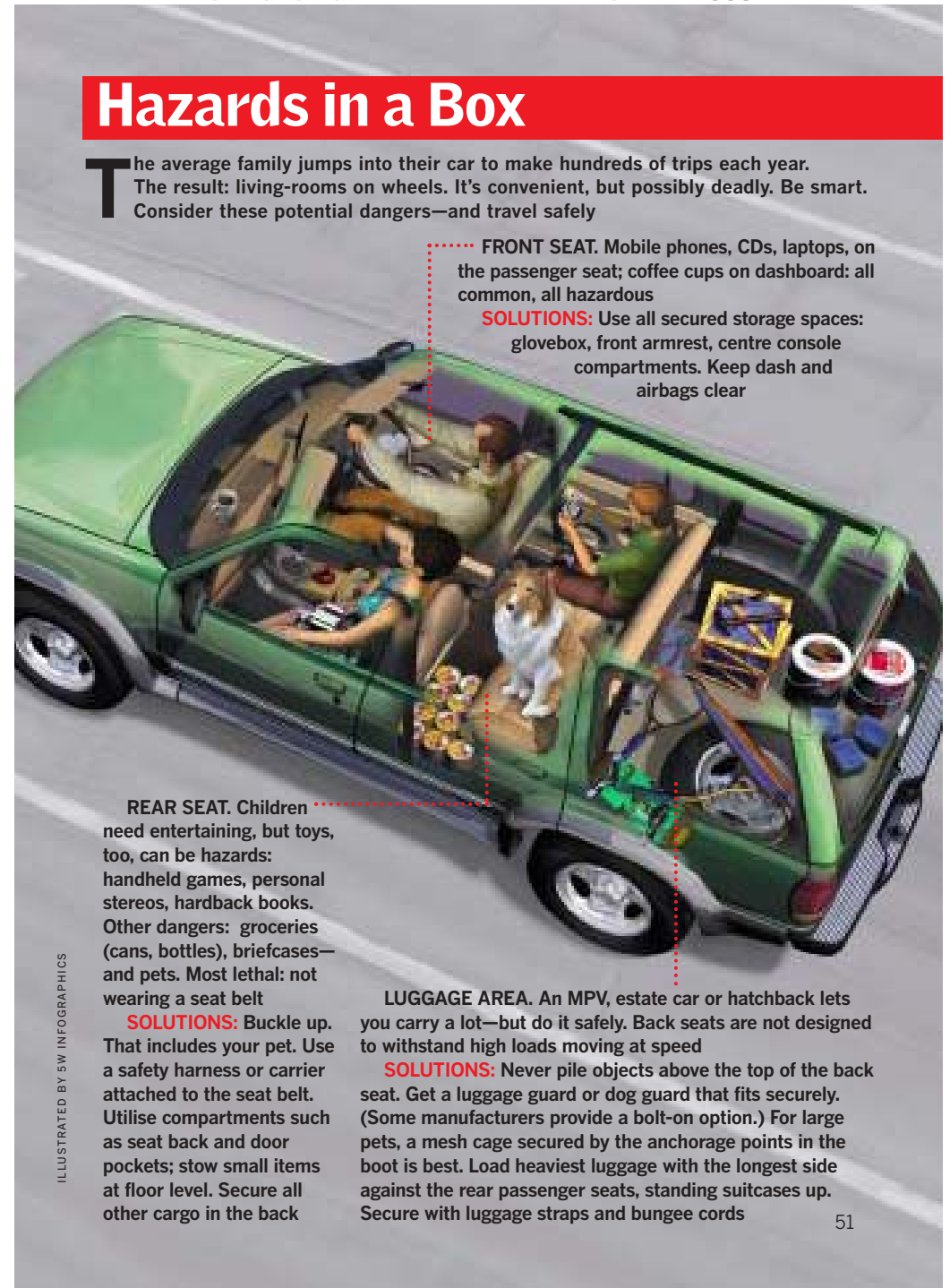
SOLUTIONS: Use all secured storage spaces: glovebox, front armrest, centre console compartments. Keep dash and airbags clear

REAR SEAT. Children need entertaining, but toys, too, can be hazards: handheld games, personal stereos, hardback books. Other dangers: groceries (cans, bottles), briefcases—and pets. Most lethal: not wearing a seat belt

SOLUTIONS: Buckle up. That includes your pet. Use a safety harness or carrier attached to the seat belt. Utilise compartments such as seat back and door pockets; stow small items at floor level. Secure all other cargo in the back

LUGGAGE AREA. An MPV, estate car or hatchback lets you carry a lot—but do it safely. Back seats are not designed to withstand high loads moving at speed

SOLUTIONS: Never pile objects above the top of the back seat. Get a luggage guard or dog guard that fits securely. (Some manufacturers provide a bolt-on option.) For large pets, a mesh cage secured by the anchorage points in the boot is best. Load heaviest luggage with the longest side against the rear passenger seats, standing suitcases up. Secure with luggage straps and bungee cords



ILLUSTRATED BY 5W INFOGRAPHICS

investigated in the West Midlands, a local handyman had been carrying some metal shelves loose behind the driver's seat. "When he was forced to brake suddenly, the shelves sliced straight through him. It was the messiest fatality I remember."

Extreme Force. Farm worker Mota Singh, 44, was being driven to work near Chiddingfold, Surrey, when the driver of the van he was travelling in lost control and veered into a bridge. Singh died from a fractured skull—caused by a trolley jack.

"Tragically, they hadn't given a thought to securing the jack," says Sergeant Phyllida McLeod of the Surrey Police Strategic Traffic Unit. "When the van stopped on impact, the jack kept moving, turning into a killer weapon."

The list of projectiles goes on: a golf ball that escaped from a bag of clubs and cracked into an Exeter driver's back, causing irreversible paralysis; a rucksack that shot up through the back of the vehicle, shattering the spine of a young hitchhiker in Scotland, destroying her major organs.

Even our pets are potentially lethal missiles. "Many owners let their dogs ride loose on the rear seat; cat carriers are placed unsecured in the back," says Kevin Clinton, head of road safety with the Royal Society for the Prevention of Accidents.

"In a 30mph crash, an unrestrained border collie weighing 23 kilos will hit with the force of nine 12-stone men. That's enough to break your neck."

Buckled Up? It was nearly 9pm when three friends in their seventies were driving home to Ilford from Romford in Essex. The two passengers were sisters—and the one in the back was not wearing her seat belt.

Without warning, an oncoming car racing another vehicle at the lights smashed into them. As though shot from a cannon, the rear-seat passenger blasted into her own sister's body, throwing her forward against the seat belt, crushing her windpipe.

"Death would not have happened had she been buckled up," says the Metropolitan Police traffic officer who attended the collision. "No other accident has stuck in my mind like this one because of the terrible tragedy of one sister killing the other."

A passenger hit by another occupant can suffer severe head trauma, a broken neck or spine. If the front passenger is pushed harder into his seat belt, he could end up with deep bruising of his internal organs. A rear passenger could slam into the back of the front seat, collapsing it and crushing or asphyxiating someone in front who acts as a crude airbag for the person behind.

Why do 42 per cent of Britons fail to buckle up in the back? One factor, say safety experts, is that some of the biggest offenders—young people aged 16–24—plead ignorance of the risks, despite the Government's "Belt up in the back" advertising campaign. And when police do pull

someone over for a seat belt violation, the penalty comes in the form of a mere £30 fine.

Good Advice. On a clear morning last September, Doreen Daniels loaded her Mazda 626 Estate with everything she needed for her trip from Ryde, Isle of Wight, to visit her daughter in Ayrshire. To accommodate her large German shepherd (not travelling on this occasion), the car has a strong custom-built cage separating the passenger and boot area. After an overnight stop Daniels was rejoining the

M6 near Knutsford in Cheshire, where roadworks funnelled traffic into one lane, when without warning a speeding car cut in front of her, forcing her to brake violently.

Daniels sat frozen, secured by her seat belt. Meanwhile, suitcases, bags, bottles, a first-aid kit, riding gear—all remained inside the cage in the back.

"Without the divider, I know I would have been badly injured," says Daniels. "Yet I've never read anything about the dangers of projectiles. Why does no one ever mention this?"

PHOTOGRAPHIC MEMORY

I'm a customer-service representative for a phone company, and one day someone called to place an order for new services.

After gathering his personal information, I advised the customer that he would have to provide proof of residence—a utilities bill or tenancy agreement, for example.

A few days later, I received a photo in the post. It showed a man pointing to the house behind him.



NELLY ALMANZAR-FELICIANO

ABROAD SELECTION

I have worked as a travel agent for more than 20 years and have heard many funny questions and requests.

My favourites: "How far ahead do I need to book a two-week advance ticket?" and "I want to sit on the shady side of the plane."

TAMMY JOB

FLOP GROUP

Committee: A group of people who individually can do nothing but as a group decides that nothing can be done.

FRED ALLEN

FILLERS ILLUSTRATED BY BILL SANDERSON AND JAMES McMULLAN