

inside story Britain's boffins



Be prepared to be dazzled as we meet six DIY inventors whose clever creations aim to make life easier for drivers

PICTURES: TOM WOOD, DEREK GOARD AND UNP

IDEA PARADE



Dennis Doerffel displays his home-made hybrid (left), while parliament stonemason David Baker penned amphibious LandShark

Max Glaskin

THIS time next year they could be millionaires! These people are inventing the future of motoring right now – and they're doing it in their sheds, workshops and spare bedrooms. Each has come up with an innovative idea to make life better for Britain's drivers – solutions that will improve current standards of car safety, security, fuel economy and even sheer motoring pleasure. They are following in the footsteps of the great automotive pioneers of the past, and there are plenty more like them hidden in workshops across the UK.

Okay, so they're a little eccentric, as they'd be the first to admit. But they're passionate about their ideas and believe they can make a difference. All have two things in common; they're trying to attract the attention of the big car makers, and they need cash to help them take their inventions to the next level.

Hybrid revolution

YES, it's a Ford Fiesta MkIII (main picture), and bar an electric motor plus a tiny 250cc four-stroke scooter engine that charges up a pack of lithium ion batteries, it's got nothing under the bonnet. People may laugh, but their jaws drop when Dennis Doerffel tells them his supermini is capable of an amazing 250mpg.

While Toyota brings out its second-generation Prius hybrid car, postgraduate student Dennis is perfecting his first. He left Germany to come to work in Britain, and his job at Southampton University lets him investigate cheap, powerful and light lithium batteries from China, because he suspects they can make hybrids work. His fuel tank is 60kg – a quarter of the weight of the lead acid batteries in traditional hybrids. "The challenge is to

understand how they behave over time, and to manage the power efficiently," Dennis told us. He's been tinkering with electric cars for a dozen years, and reckons hybrids are the future. So far, he's persuaded 20 UK electric-car owners to buy his batteries for tests. The next step is to do a deal with an auto maker to build a really good prototype. "The system could be ready within two years at a cost of less than £500,000," he said.

Want to know more?
E-mail d.a.doerffel@soton.ac.uk

LandShark's making waves

DAVID Baker works on the roof of the Houses of Parliament as a stonemason, repairing the Victorian architecture. It was up there, with his head in the clouds and his eyes on the Thames far below, that he had the idea for a fantastic 21st century amphibious car: three wheels, 200mph on land and 50mph on water.

Rather than just tell his mates over a drink, then forget all about it, David, from south London, made plans, found backers and even got Lotus on board to build a one-third scale model of the LandShark. The hub of its single rear wheel acts as a turbine in water, while the front mudguards turn into

skis to reduce drag. A video games firm produced computer-animated sequences of the car driving from land to water, and David took three costly years off work to drive the project forward.

"I've rejected silly offers to buy me out completely, because I want to see this through myself," he told us. He is now working with a plastics company to bring the vehicle out as a radio-controlled model that will be sold to raise income. "About £200,000 would get us started, but we need £2million to build a car that will set a new



Three-wheel 'Shark has 200mph potential

world record for amphibious vehicles," explained David. That would be a drop in the ocean for winning a share of the fun vehicle market.

Want to know more?
Visit www.landshark.co.uk

Alarming idea to beat crime

THE idea for a new car alarm trigger came to Ivan Green moments before he fell 250ft off Ben Nevis. He was following a simple compass bearing to get down a mountain path at night, and realised a hand-held digital device with coloured lights would keep him on track better. Then he plummeted into Five Finger Gulley, and was lucky to escape with only a broken rib.

Eight years later, he has turned his brainwave on its head and developed a prototype that's making car manufacturers sit up. "Instead of using a compass to point north, this one senses when it moves through the Earth's invisible magnetic field," said Ivan, an electronics consultant at Fruition Design in Sheffield. When the car is locked and the alarm armed, the tiny sensor triggers the horn and lights if it's moved by even a few centimetres.

Ivan added: "It's also immune to vibration, so it won't go off on a windy day or when a lorry drives past." Most current triggers use mercury, which is sensitive to passing traffic. As mercury is set to be outlawed, Ivan knows car makers are searching for a replacement. "The prototype is four centimetres square and will piggy-back nicely on to security units. It has to cost less than \$4 – about £2.40 – to appeal to auto firms, and we can do that," he explained. So far he has received a little funding from the Department of Trade and

People may laugh, but their jaws drop when Dennis tells them his Fiesta is now capable of 250mpg – and there is virtually nothing under the bonnet!