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THANKS FOR THE RIDE

When product designer Stuart Lambert hired a folding bike, not unlike the one pictured here, he realised the traditional designs were fraught with compromises.

Knowing he could do better, he set about designing a bike that could deliver a full size riding experience in a compact form, as Breakthrough magazine found out.

The idea for the Crosshead came to Stuart after a trip to Brussels. Missing his favourite mode of transport while on his stay he decided to buy himself a bike to explore the area. He needed to bring the bike home after his trip, so he opted for the practicality of a folding bicycle.

The bike did what Stuart needed it to do, but, as a seasoned cyclist, he was far from excited by

the experience. It was very much a compromise, between the ride experience and the practical aspects of a folding bike.

This experience set Stuart's designer's mind working and, as the bike sat in his hallway for the following months, he realised there was a gap in the market.

Folding bicycles are generally created around the principles of making a good small bike. Stuart



wanted to approach the task from the opposite side and make a good bike, small.

The difference is subtle, but Stuart could see how the traditional approach to folding mechanisms created a weak point in the frame which allowed for flexing that impacted on the ride. While the typical wheel size on folding bicycles, 16 inches, also had an adverse impact on the rider's experience.

These two areas, combined with Stuart's overall focus on quality and design, became the core criteria for the Crosshead bicycle. It needed to be able to incorporate larger wheels to improve the ride, while employing a folding mechanism that allowed the larger-wheeled form to still become compact, without impacting on the integrity of the frame.

From that point to where Stuart is today has been an eight-year journey which has seen five prototype versions of the Crosshead design, as various aspects have been refined.

The latest version—the CP-05—delivers on those initial design criteria, and more. It uses 20-inch wheels and full-size bicycle geometry that give the bike the feel of a full-size alternative. A cleverly designed three-point folding mechanism ensures a rigid frame. Despite the larger overall form of the bike, the mechanism still allows it to be classed as a 'compact folder' by the rail operators when it folds to one-third of its original size. This is a critical point for the commuter market where the operators resist larger fold-in-half bikes.

The ability to deliver a quality ride in a compact form is supported by secondary safety locks incorporated into the folding mechanisms which enhance the rigidity of the hinges. The chosen frame material, aluminium, while hard to work with has also helped by giving the Crosshead a perfect balance between weight and frame stiffness.

Following the principles of performance as well as function, the frame tubes are shaped as aerofoil sections, a technique used on high-end road bikes. The folding mechanisms also sit flush with the frame, drawing inspiration from aircraft door handles to minimise their aerodynamic impact.

Stuart also ensured his design enabled a broad range of ancillary components to be used. Multiple mounting points allow, for example, for the choice between ten and 20 gear versions, while a variety of other options are available including touring or racing style handlebars and luggage attachment.

The fact that the idea for the Crosshead survived those eight years of development is, in part, down to how prepared Stuart was for the journey. Yes, he was a trained product designer having studied at the Royal College of Art (RCA),

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but he had also spent seven years as managing director of his family's security business—far away from products and indeed manufacturing—and achieved an MBA. All this has given him a keen understanding of what it takes to run a successful business.

His experience and background had also given Stuart two strong beliefs. The first was in the role that design plays at board level. He believes that bringing a design perspective to the board will give a business an edge—the ability to be a challenger business or indeed a leader in its field. Companies like Apple or Dyson, for example, demonstrate this principle.

Stuart also firmly believes that 'you can't do everything yourself' and says that bringing the right people into a business is a critical success factor. Stuart is keen to stay involved in all aspects of his business, but he realises there are areas where others can spend their time better than he can. So, from an early stage, he has engaged with individuals who have expertise in the areas he saw a need for, building a board of shareholders to compliment his skills.

Stuart also developed a working relationship with an engineering firm early in his journey, to help support the development of the early versions of the Crosshead.

The importance of a close working relationship between product design and engineering was also something that Stuart had learned in his RCA days. As a result, when the project progress enabled and required it, he teamed up with Alex Kalogroulis, a design engineer with experience in folding bicycles, who also became a shareholder in the business.

Today, at the end of that eight-year development journey, parts are about to be delivered for the assembly of the very first production bikes from Crosshead. And so it seems Stuart's passion was well placed; that he can realise his vision to make a good bike small; and that convenience doesn't have to mean compromise.

Crosshead
www.crosshead.co.uk

