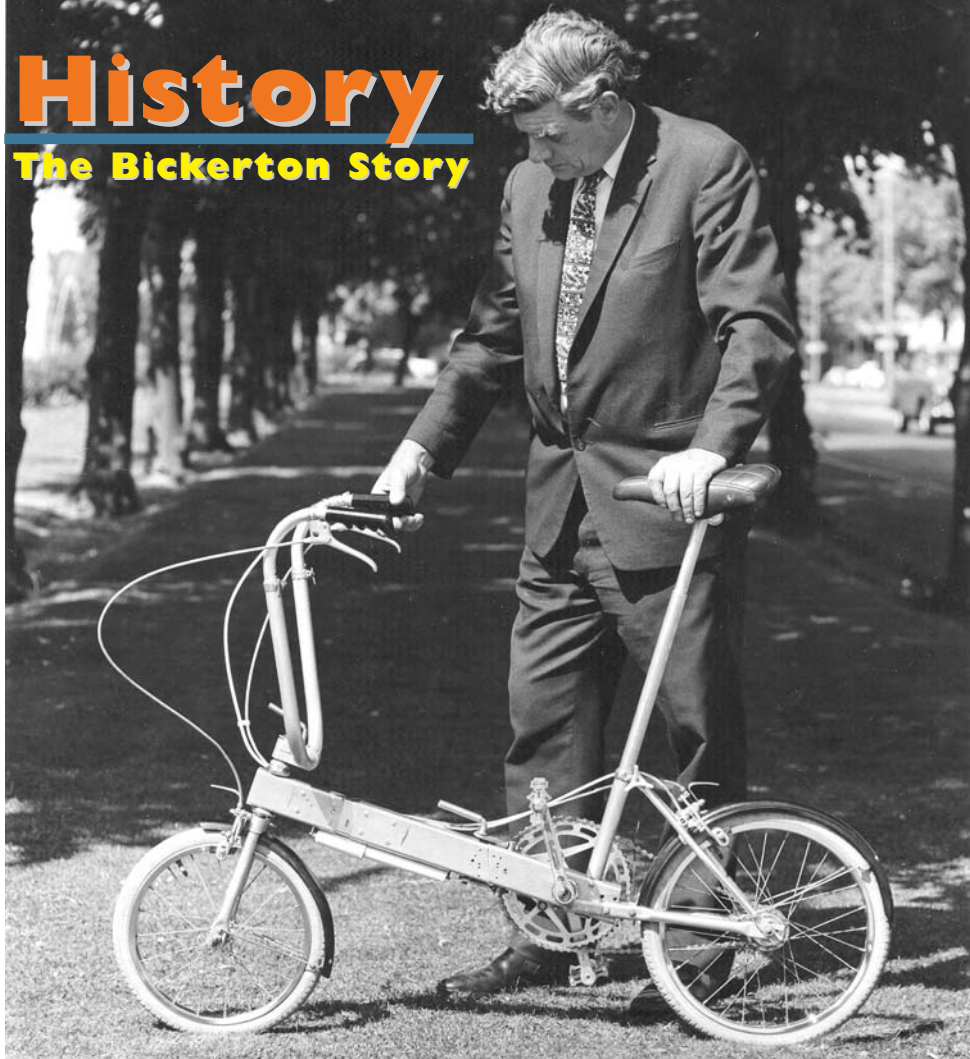


History

The Bickerton Story



To trace the origins of the Bickerton folding bike, we must look back to the dark days before the Second World War when the might of the Nazi war machine looked set to cast a thousand year blight across Europe and beyond. In the event, things turned out rather differently, for thanks to the work of a small group of British engineers and designers, Hitler's evil plans were eventually thwarted. One of those men was Harry Bickerton.

Born in 1922, Harry left school at 16 to take up an apprenticeship at Rolls-Royce in Derby. They were heady days for a young engineer. With war looking increasingly inevitable, and a growing certainty that the outcome of the conflict would hinge on air superiority, it became abundantly clear that Britain only really had two trump cards: the Spitfire fighter plane, designed by the legendary R J Mitchell, and its Merlin engine, developed by Rolls-Royce.

During the pivotal Battle of Britain in the summer of 1940, this brilliant airframe/engine combination saved the British Isles from invasion. But while 'the few' fought for the skies over

Kent, another battle was raging at Rolls-Royce, to squeeze more power and reliability from the Merlin. It was into this maelstrom that the young Harry Bickerton was thrown in the early days of the war.

“...a crucial role in developing the systems that brought the Merlin to the pinnacle of technology...”

After his apprenticeship, Bickerton was transferred to Rolls Royce in Glasgow, to work in the Merlin engine factory, and then was seconded to the Royal Aircraft Establishment at Farnborough, where he worked with Tilly Shilling, playing a crucial role in developing the methyl-water injection system and tuned-length exhausts that helped to bring the Merlin to the very pinnacle of piston-engine technology, maintaining the Allies' air superiority and setting the scene for the final victory in Europe in 1945. In its final form, the Spitfire had enough performance to catch the V1 flying bombs heading for London, whereupon the pilots gently flipped the bombs off course.

After the war, Bickerton moved to the de Havilland engine company, where he was appointed director, leading work on internal combustion engine projects, primarily the Gypsy engine series. He was also involved in the investigations into the failures with the Comet, the ill-fated British jet airliner that proved, quite simply, years ahead of its time.

During a long career in the British aeronautical industry, Bickerton went on to develop the engines for the Skeeter, Britain's first helicopter, then took up a peripatetic lifestyle working for most of the big names, until the industry began to self-destruct in the 1950s.

Perhaps aware that few of the up and coming British aeronautical inventions were ever to see the light of day, Harry left the industry in about 1960 to become an independent inventor. This second career proved as fruitful as the first, and - working primarily with medical equipment manufacturers - he went on to develop a number of machines, including a centrifuge for separating red and white blood cells. And so Harry Bickerton kept busy and solvent throughout the middle years of his life until one fateful day in 1970 that was to set him off on a tangent, and make his name known around the world.

The Bickerton family regularly spent holidays on the Isle of Purbeck in Dorset, and this particular year Harry was involved in a car crash that, thankfully, caused no serious injury, but left the inventor with a three-year driving ban. Most people would just have accepted the situation, but to the fertile mind of a former Rolls-Royce engineer, a driving ban was just one more engineering problem looking for a solution. So Harry Bickerton set about designing a machine that would provide him with personal mobility yet - crucially - could itself be carried by car, bus or train.

The engineer set broad parameters for the project, toying for a while with such ideas as personal inflatable airships, before opting (perhaps fortunately) for a machine based loosely on the conventional bicycle. He had bought a lightweight racing machine after the crash, but finding it inconvenient for carriage on public transport, he took a sideways move to one of the better folding machines - the 20-inch wheel Puch Pic-Nic. Then in the time-honoured tradition of engineers everywhere, he set about studying and improving upon the Puch, which he likened rather unkindly to, 'a heap of scrap iron.'

Clearly the new bicycle would have to be lighter and fold smaller than its competitors (not a difficult task in 1970), and Harry Bickerton also set himself the tough goal that his new machine should fit into the boot of an Austin Mini. To an aircraft engineer, the solution was obvious, and Harry Bickerton proceeded to design a machine built of aluminium alloy, the material he knew best.

The result, after a number of prototypes had been built (initially of steel) was a sturdy aluminium box-section frame of 64mm x 41mm around which the other components - primarily of aluminium - were mounted. The little bike weighed just 8.2kg (18lb), yet it could

be adjusted to fit most riders, and folded to 76cm x 51cm x 23cm, a volume of around 89 litres or 3.1 cubic feet - excellent even by modern standards. It fitted comfortably into the boot of a Mini too.

Two unusual features that were to become the bike's trademarks were the differential wheel sizes (14-inch front and 16-inch rear) and ungainly 'Chopper style' handlebars. Both features were dictated by the geometry of the machine, and - like them or hate them - they were destined to stay with the machine throughout its life. Another unusual feature was the modest fork rake, which gave the bike relatively little 'self centering' in the steering. In other words, it was not a machine to ride 'hands off'. This caused a nasty accident during the development phase when Harry Bickerton forgot to fasten the handlebars while experimenting with different settings, and was thrown off the machine...

Another early casualty was the Bickerton's phenomenal weight of only 18lb, as it soon became clear that the Great British Public treated machinery very differently to the engineer who had designed it. As Harry Bickerton emphasized in an early brochure, remembered more for its refreshing honesty than empty PR gush, the bike was, 'designed for intelligent, competent human beings - not gorillas.'

As Harry's son Mark put it, 'Making [the bike] gorilla-proof is something one has to do to enter a mass-market'. The production machine eventually hit the scales at 9.1kg after various bits had been judiciously strengthened.

With its unusual geometry, alarmingly twistable frame and tall flexible handlebars, even the Bickerton's best friends were initially put off by its riding characteristics. Some people just couldn't live with it, but over time, many others came to accommodate, even enjoy the bike's wayward behaviour. The key to understanding the Bickerton was to bear its origins in mind, and imagine you were flying an aircraft rather than riding a bike. If you rode fiercely, the frame flexed beneath you like a jelly, but with gentle handling the Bickerton could float and bank like a plane.

Mass Production

That such an unusual machine sold quite well is somewhat surprising with the benefit of hindsight. It was very expensive (at around twice the price of a 'conventional' folder), and the unusual, but strangely elegant, appearance was quite unlike anything else available at the time. But the public was



captivated by the light, compact machines and by 1972 Harry Bickerton and his assistant Chris Brown had started small-scale production at a small workshop in Codicote in Hertfordshire, building around 300 bikes in their first two years.

Assembly of the bikes would never be more than a cottage industry at Codicote, and as demand grew, Bickerton sold the manufacturing licence to Steve Rowlinson, chairman of the TCK Group, a heavy engineering concern based in Aston, Birmingham.

The arrangement proved beneficial for all concerned - TCK was looking to diversify, Bickerton needed an industrial partner, and the 1973-74 oil crisis boosted demand, Bickerton production peaking at 1,000 a year. But the boom couldn't last, and the recession that followed the oil crisis, followed by a run on the pound and galloping inflation, left TCK hopelessly uncompetitive in its crucial, but volatile, overseas markets.

By 1977, the company was bankrupt, Bickerton production had ceased, and the rights had reverted to Harry Bickerton. But the bike wasn't destined to be out of production for very long. Harry sold the world manufacturing rights to an Australian trio, Messrs Patterson, Ingram and Gandy, who set about establishing world sales licenses in the USA, Germany and Sweden; the bikes being assembled from kits produced in Australia.

But once again - despite worldwide sales of over 50,000 - the company got into difficulties, and in 1982 (by which time unpaid royalties amounted to some £60,000) the agreement with the Australians was terminated.

With manufacturing rights back in Britain, the wheel proceeded to turn full circle. Harry Bickerton and his son Mark teamed up once again with Steve Rowlinson to create Bickerton-Rowlinson Ltd, and the Bickerton bicycle was manufactured in its last phase from a factory in Little Mundells, Welwyn Garden City.

For a few years, production went smoothly enough, but the impetus began to slow when Steve Rowlinson was head-hunted by Korn Ferry International - a company he was soon to lead as chief executive. Meanwhile, Harry Bickerton (by this time well into his sixties) went into semi-retirement, leaving day-to-day control with his son Mark, barely into his twenties at the time. Despite economic gloom at home, sales of the ageing folder remained buoyant, with exports to Europe, the USA, Australia, New Zealand and Scandinavia, as well as enjoying a healthy home market.

After Harry's retirement in 1987, Mark attempted to diversify, importing the new Dahon, and marketing it as the Bickerton-Dahon (and later as the Bickerton Californian) - quite a feat as the Dahon was already being sold in the UK at that time.

The Dahon was developed in the United States by Dr David Hon, a Hughes Aircraft laser engineer. The bike was solid and simple, but hardly rocket science, and it weighed a massive



Bickerton production at the Welwyn factory in 1988. The company looked successful enough, but it was living on past glories. Within three years it would all be gone



ABOVE: The Country - initially, as here, with 20-inch wheels, but later with a 16-inch front wheel - was an attempt to widen the appeal.

RIGHT: Don't try this at home. It was still quite a frail machine



where the 14-inch front wheel of the Bickerton could cause serious embarrassment.

The larger wheels were a great

improvement in this respect, but attempts to break into the off-road market with a 6-speed derailleur model proved a little optimistic, and did nothing for the company's reputation. And as the Country kept the Portable's geometry, but lacked its small front wheel, the folded package was rather unwieldy. Nevertheless, it was a practical and comparatively light machine and sold in respectable numbers. Under Mark's supervision, the Country later reverted to a smaller 16-inch front wheel, which did nothing for the off-road performance, but reduced the folded package to a more manageable 5.3 cubic feet, and the weight to 12.5kg.

By 1989, the Bickerton range extended to no less than seven models: the Classic (formerly the Portable), as a single-speed, or in Sturmey-Archer 3-speed or 5-speed configuration; the Country (6-speed derailleur, or Sturmey-Archer 3- or 5-speed hub); and the Californian, available only with the S-A 3-speed hub.

But volumes continued to fall, and it became painfully obvious that the Bickerton needed a major facelift using the latest technology to avoid a lingering death. Competition in the folding bike market was becoming increasingly fierce, with the Bickerton range suffering a terminal squeeze between the heavy but cut-price Dahon, and the classier, more attractive Brompton, which had achieved the apparently impossible feat of folding as small as the Bickerton, yet riding much like a normal bike.

Initially, Mark Bickerton and Steve Rowlinson chose to stand and fight, putting £12,500 into a DTI Smart Award programme that yielded £37,500 from the government in the form of

development capital. The National Engineering Laboratory at East Kilbride was tasked with investigating advanced composite materials, and the team at Little Mundells set to work.

They needed to design a machine that would take the same leap forward in industrial design that its forerunner had achieved in 1970, but in an uncertain bike market, with strong opposition, Bickerton-Rowlinson stepped back from the abyss, opting out of the second stage that would have seen the machine through to production, and effectively sealing its own fate.

According to Mark Bickerton, 'we either had to put in a hell of a lot of money or duck out, and I'm afraid we took the duck out option.' Had they known that British Rail was about to impose swingeing penalties on the carriage of bikes, things might have been different.

After a production run of almost twenty years, the last Bickerton was produced in 1989, although spares, and a few complete bikes continued to drift out of the factory until the following year, when Mark set up Fusion Cycles to import the American-made Klein mountain bike, the factory being finally vacated in 1991.

So what went wrong? How could a company that had sold 450,000 bikes, either directly or under license, have failed so suddenly? With the benefit of hindsight, Bickerton-Rowlinson might have done better to develop a new machine as early as 1982, when the Australian operation collapsed, for the Bickerton was already showing its age. By 1989, it was too late, and the necessary investment had begun to look like a considerable gamble.

Postscript

Mark went on to carve out quite a career in the bicycle industry, through his involvement with the Bicycle Association, and his own business marketing a variety of brands, primarily Dahon. When the Dahon family business split apart in 2010, Mark together with pretty much all of the international team from Dahon's Taipei office and US and European affiliates formed a new holding company to manage global product development, marketing and sales for the new Tern brand, as well as the soon to be relaunched Bickerton brand, which has already been launched in continental Europe, Russia and Japan. Other countries will follow, including the UK.

“...a machine that would take the same leap forward as its forerunner had achieved in 1970...”



Bickertons still have an enthusiastic following, even today, although few people would follow Andrew Robins' example and race one. This machine has appeared at several London Nocturne Folding Bike races