BRAND PROFILE: RUSSELL ATHLETIC

Russell Brands has a colourful history, from being one the largest manufacturers of athletic goods in the US to retrenchment in the 1990s that saw the loss of half the group's jobs. It has since refocused on its team-sports strengths and is charging into battle on the American football field, partnering with carmakers and Boeing in the process.

School of hard knocks

The clattering collision of American footballers is known to match the G forces experienced in a car crash. While scientists have been assessing these impacts so that vehicles can be designed to reduce brain injury in the case of a crash, Russell Athletics' designers have been looking for solutions for the athletes, and decided it was time to move away from their traditional materials suppliers. "We reached out to some tier one automotive suppliers in Detroit as, we figured, who knows more about collisions than the folks that make products for automotive?" says the brand's vice-president of product and design, Sarah Gholston. "We really wanted to scrap everything we'd ever done with shoulder pads and open our minds to something different."

The tie-ups with these carmakers came after the company's umbrella group, Russell Brands, bought Bike Athletic in 2002 and, with it, protective know-how. Bike had plenty of experience in helmets, shoulder pads and protective girdles, which Russell realised it could use to its advantage. "American football is one of our biggest businesses; we've been doing it for a long time and we have a tremendous amount of innovation in that category, mostly around the uniform side," says Ms Gholston, "so what we wanted to do was expand upon our market share of uniform for football and get into protective."

The team worked with carmakers to produce a dual density foam that uses patent-pending oblate spheroid (OS) technology that disperses force in a novel way. The impact energy turns into heat, which is dispersed across the foam, while the perforations in the centre of the foam help to release the heat.



"We believe there has been a void in innovation in the shoulder pad space," said Robby Davis, Russell Athletic general manager.

Russell Athletic

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Dr Richard Brandt impacted a pad-protected torso with solid loads to reproduce the forces encountered in collisions.

Russell Athletic

"So when it came time to make the exoskeleton that sits on top of the vest we leaned on our automotive suppliers and engineers again to brainstorm on materials that would be able to handle that level of impact, disperse the energy and reduce the weight of the pad," adds Ms Gholston. "We kept coming back to carbon fibre."

Reach for the skies

One of the world leaders in working with carbon fibre is aviation group Boeing, which was looking to further its environmental goals by improving end-of-life options for its materials. Jessica Kowal, environment communications for Boeing, explains, "Because we've increased the use of carbon composites in our airplanes, we wanted to find new ways to reuse and recycle carbon fibre from our production. Our collaboration with Russell is a fabulous opportunity to use the strength and lightweight characteristics of 787 carbon fibre to support elite athletes on the field."

The CarbonTek with OS Technology shoulder pad system therefore has the sports industry's first exoskeleton made of aerospace-grade carbon fibre, and is thinner, stronger and lighter than conventional material, according to Russell's lab and field tests. These have been verified by sports scientist Dr Richard Brandt, founder of Sports Science, who developed a new method to test the design. "CarbonTek outperformed the other shoulder pads in all assessed aspects of impact dispersion, with the most notable finding being a more than 63% reduction in the average force felt through the CarbonTek shoulder pad system in a 600-pound impact test," he claims.

The new pads have now undergone two seasons on the field, first with Auburn University and this past season with division one schools and National Football League (NFL) players. "We recently attended the American Football Coaches Association meeting and we had a tremendous amount of interest for the shoulder pad in Europe, so we're looking to expand our distribution overseas," says Ms Gholston.

The company's core team sports – American football, baseball and basketball – are all very much US-focused, a strategy it relies on to differentiate it from other brands. Carving out this niche has been important for a company that was once one of the biggest apparel manufacturers in the US, an impressive run for a company that started with 10 employees in 1902.

Humble start

Russell Manufacturing was launched by Benjamin Russell in Alabama's Alexander City, and stayed a family business for the next 60 years. Originally specialising in work shirts and undergarments, adding spinning and dyeing helped it to secure lucrative army contracts as demand for cloth increased during the First World War years. By the 1930s it had bought finishing and dyeing capabilities and established itself as one of the first fully integrated apparel manufacturers in the US.

Despite a dip in the great depression, the athletic division was launched in the 1930s, a screen printing business enabling it to print names and numbers onto shirts. By the 1960s, the division took over its own factory and became the largest marketer of athletic goods in the US. It bought Quality Mills in North Carolina and Cloathbond in Scotland to supply to European customers and established itself as a globally recognisable brand.

Equity released from going public in 1963 helped it to keep expanding, buying more

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factories across the US. Sales reportedly rose around 10% per year between 1970 and the early 1990s, buoyed by an increasing interest in keeping fit, and by 1990 the company owned numerous plants and employed 15,000 workers.

However, 1996 was to prove the top of the roller coaster as the group ran headfirst into trouble. Undercutting by its rivals and increasing competition meant sales took a dive. In 1998 former Hanes CEO John Ward was drafted in to take drastic action: he saw competitors were using cheaper overseas manufacturing and set about moving production abroad, closing factories, distribution centres and stores, and laying off a large part of the work force. Most of the final assembly of garments was moved to Mexico, Honduras and elsewhere in the Caribbean basin. Poorly performing brands were sold. Two years later, the group looked very different: 6,000 employees down, a new headquarters in Atlanta and an entirely new geographical footprint.

New-look group

The newly streamlined operation fell under the gaze of investment group Berkshire Hathaway, which paid $600 million to manage it alongside its Fruit of the Loom business in 2006. After bringing in John Holland as CEO and offloading its less profitable divisions, it began building its sports portfolio again: Mossy Oak, Moving Comfort, Jagged Edge, Bike Athletic Company, American Athletic and Brooks Sports. Basketball brand Spalding helped it corner a niche, and it refocused Russell Athletic into the areas it was good at: US-focused team sports.

Ms Gholston has witnessed many of these changes. "The business of sporting goods has changed so much, even in the past five years," she says. "The competitive landscape has changed and it's never easy when you have big changes within a corporation, but I think that what we've been able to do over the past several years is put our feet back underneath us and start looking at more innovation and regrowing the Russell Athletic brand."

The retrenching meant a refocus on core values. Although it does not currently supply the professional leagues, university leagues and Little Leagues are a mainstay. In July 2014, it launched new uniforms to celebrate the 75th anniversary of Little League, which it has supplied for three decades. "We want to be a part of youth sports because that's really where a lot of the participation is, and we want these young athletes to know Russell Athletic through their athletic career."

It again suffered a setback in 2009 when universities launched a boycott after hearing rumours that 1,800 Honduran staff had been laid off for forming a union to counter poor working conditions; Russell denied any wrongdoing and said the factory closures were the result of the global economic downturn. After a passioned campaign by students, which included picketing NBA games, Russell rehired 1,200 workers at the Central American plant and established a workers' welfare fund and agreed to a union.

A tricky episode to move away from, but the company now sees running its own manufacturing facilities as a differentiator. "We're well over 100 years old and you don't see a lot of companies that have that history, particularly in our business," adds Ms Gholston. "One of our strengths is that we are a manufacturer so we make a majority of what we sell, specifically on the team side of the business – a lot of our competitors don't. We set the bar high for what we provide on the field, there's a lot of attention to detail and our craftsmanship is something we take pride in."



Collaborative efforts extend carbon fibre's life

Question: Why is carbon fibre useful?

Answer: Carbon fibre is made mainly of carbon atoms. These filaments are held together by resin and heated in a high-pressure autoclave to make carbon fibre-reinforced composites, which are used for example to build a plane's fuselage or wings. These composites reduce the plane's weight, which improves fuel efficiency and reduces carbon emissions. By using composites, you can lower the cabin altitude, which improves the passenger experience.

Q: How has Russell used Boeing's carbon fibre?

A: So far, Russell Athletic is using carbon fibre that has not been made into composites yet. As a next step, the companies are discussing opportunities to leverage other sources of carbon fibre, such as fibre recycled from composite parts.

Q: How else can carbon fibre be reused?

A: The goal is for carbon fibre to eventually be fully recyclable and reused for high performance products such as aerospace and automotive. Boeing is working with the UK's University of Nottingham, BMW, Oracle TEAM USA and Lotus Formula One Team to refine the recycling process.

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