FOOTWEAR TECHNOLOGY: SALOMON

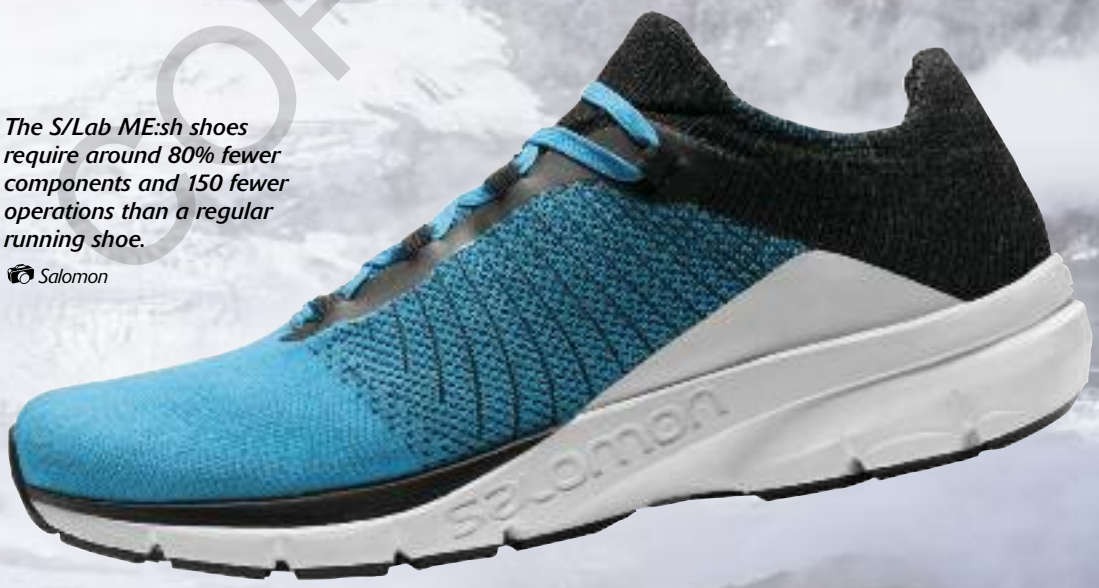
French brand Salomon has developed a new process for manufacturing customised running footwear that it believes can "transform the shoe sector".

By the people, for the people

On May 21, just 26 hours after setting off from the north face base camp of Mount Everest (at 5,100 metres altitude), ski mountaineer Kilian Jornet reached its summit, setting a "fastest known time" in the process. The feat is remarkable in itself, but the fact that he managed it without the use of supplementary oxygen or fixed ropes makes it even more extraordinary. To put the scale of his achievement in context, expeditions to the peak of Everest at 8,848 metres typically take around four days. Not that he took much time off to bask in his success; less than a week later he made it to the summit once more, this time completing the ascent from advanced base camp (6,400 metres) in 17 hours. These exploits were the latest stage of the Summits of My Life project, which has seen the Spanish athlete attempt to establish ascent and descent records for some of the world's most important mountains.

Much of the kit that Mr Jornet wore during his record-breaking ascent was provided by French mountain sports brand Salomon, with which he has long been associated. He is the inspiration behind the brand's latest venture, a new range of custom running shoes that it hopes can be made closer to the market into which they will be sold. During an exchange in 2008, Mr Jornet asked his sponsor if it would be possible to create a trail running shoe tailored specifically to his needs. This would mean no longer worrying about what was happening to his feet, he said, allowing him to instead focus on the race or challenge at hand. In short, he wanted footwear that served as an extension to his body. Salomon made this a reality, prompting the athlete to pose another question: why couldn't the brand do the same for all runners?

After almost a decade of research, prototyping and testing, Salomon is now ready to give everyday runners the same service afforded to the world's leading athletes as part of a project it calls S/Lab ME:sh. It will allow the brand to offer running shoes built specifically for an individual, taking into account the shape of their foot, their running style and the conditions in which they train or compete. The company describes this concept as "co-creation" because the wearer plays a part in the manufacturing process.



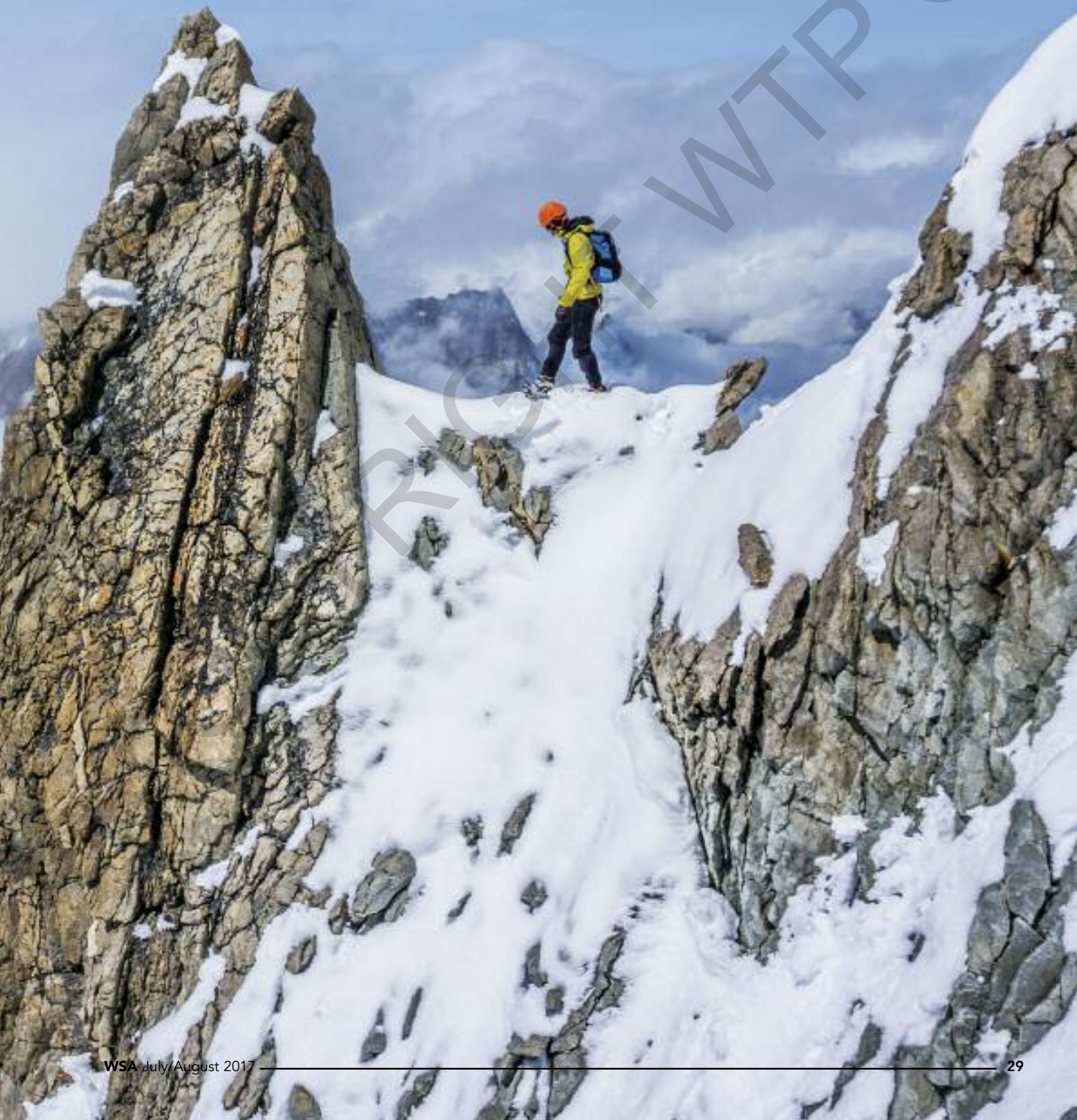
The S/Lab ME:sh shoes require around 80% fewer components and 150 fewer operations than a regular running shoe.

Salomon

The director of the S/Lab ME:sh project, Jean-Yves Coupet, says Salomon has a database of thousands of feet, which it has compiled over the past 30 years. This data shows that around 20% of people should have a "personalised footwear solution", he tells *WSA*. It is also important to consider the "biomechanics of the runner" when developing customised shoes, some athletes favour forefoot running (landing on the forefoot first), while others prefer the heel striking technique (when the heel makes the initial impact with the ground). These distinct styles "require different technical concepts", he explains. The specifications of the shoe also depend on a range of other factors, like whether they are for long- or short-distance running, if they will be used on hard or soft ground, or even the temperature in which they need to perform. All these factors are important when searching for optimal performance, Mr Coupet insists.

Streamlined structure

Salomon claims to have considerably simplified the manufacturing process for the S/Lab ME:sh footwear, reducing the number of operations required to 30; this compares to the 180 typically needed to make a running shoe using traditional methods. This has mostly been



Kilian Jornet has set ascent and descent records for some of the world's most challenging mountains.

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The S/Lab ME:sh shoes will be built at Salomon's design centre in Annecy, France.

Salomon

achieved by simplifying how the upper is made, Mr Coupet reveals, describing this as "the magic of the ME:sh shoe". It consists of just two main components, one of which is the Twinskin, a knitted sock made from different yarns to offer compression to the parts of the foot where it is most needed. This improves foothold and foot stability on all types of surface and for all foot shapes. Salomon transforms this 3D-knitted technical sock into an upper by heating it to a specific temperature using a machine developed in-house. This causes one of the yarns within it to melt, fusing the different layers of the upper together. The lower portion of the shoe is designed entirely to the needs of the customer, meeting their requirements for the drop height, cushioning (both for the midsole and inserts) and outsole. Overall, footwear from the S/Lab ME:sh range requires just 12 different components, around 80% fewer than the current average.

One of Salomon's aims when launching the project was to increase the level of automation in the production process. One robot and one machine are capable of doing "the equivalent of 50 operations in two". Although the shoe is mostly constructed by robotic equipment, it also requires the involvement of a qualified member of the manufacturing team. The company says the exact details of the process are "only known and mastered by a handful of people". "The manual input associated with the automation is what makes this process unique," Mr Coupet explains, and this shoemaking expertise is necessary to "perfect the customisation". Only two people work on each pair and their contribution is recorded on a certificate delivered with the shoes.

Industry impact

When Salomon first unveiled details about the project in May, the company's president, Jean-Marc Pambet, expressed a belief that it could "transform the shoe sector in the very near future". As well as giving customers greater freedom to customise their products, it will change how the footwear industry creates shoes, he said. Mr Coupet explained this in more detail to *WSA*, describing how the sports footwear industry has "flourished" on a single business model of mass production in areas where the labour cost is low but "industrial expertise" is high. It has long relied on the "one-size-fits-all" concept, but this is changing, he maintains, as consumers become more concerned about what is right for their body and start to demand personalised solutions.

The project also responds to growing customer awareness of the importance of social responsibility, specifically in relation to the environment. Salomon thinks the new manufacturing process will allow for shoes to be made closer to the market into which they will be sold. The company insists that more of this type of manufacturing, which has been called "local for local" by the likes of Reebok and Under Armour in recent months, will reduce the carbon footprint associated with transporting products to market. To emphasise this point, it points out that while 70% of sports shoes are currently made in Asia, around 80% are sold in Europe or North America. The need for fewer components reduces the potential for material waste, further addressing the issue of sustainability.

Salomon has established what its S/Lab ME:sh Unit at its design centre in Annecy, France, which houses all the materials and machinery

required to manufacture the shoes. There is also a modern exhibition area where visitors to the facility can watch the footwear "come to life" and learn about the history of the brand. From September, customers will be able to make an appointment to have their shoes designed and built at the unit. At the start of June, the products from the collection will go on sale at eight Salomon retailers in France and at one store in Belgium. They will have three options: Unique to Me, which are individually customised; Unique to Our Community, which are designed to the needs of runners in a particular area based on the surrounding running environment; and two models created for Kilian Jornet, giving everyday runners the opportunity to wear the exact same shoes as the athlete.

Mr Coupet feels it paves the way for "Made here with you" to replace the traditional "Made in…" label. He admits the transition to Salomon producing more footwear closer to market "will take time", but he believes this is inevitable because "the future of the industry is local". With a reduced environmental footprint from manufacturing, the creation of more local jobs and a reduction in time to market, he predicts this shift will "impact the whole value chain, from creation to distribution".

Kilian Jornet has been sponsored by Salomon for a number of years.

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