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The outdoor gear market is a fast-paced, highly technical field with new technologies being developed and launched constantly. Billions of dollars are invested annually into researching and developing new products in order to offer the consumer the best possible levels of comfort and protection. While very few would deny that the advances that have been made in terms of functionality over the last few decades are impressive, the long-standing debate on the durability of such garments and how long performance functions should, or do, last remains as heated as ever.

Durability of outdoor apparel—built to last?

The topic of longevity is very subjective. Reading the brochures, catalogues, and press releases produced by performance garment manufacturers, one is led to believe that functional apparel is a durable product. Terms such as "extremely long-lasting", "highly durable", and "lifetime warranty" are commonplace in the marketing material that is produced, but how do you define what is an acceptable lifespan for a garment? Should it last a couple of months, a year, or 20 years?

There is a saying that you get what you pay for, but everybody knows that when it comes to performance apparel, the size of the price tag is directly proportionate to the list of technical properties. Sales figures prove that people are willing to pay more to have a functional garment, but is the consumer actually aware of when the functionality diminishes? Are people happy to replace performance apparel more regularly? What drives the consumer to buy performance gear? Is it based on function or fashion? How can we define the durability of such clothing and is the longevity of a garment a priority when purchasing apparel?

The answer to these questions, in short, is that

Crossing the Southern Patagonian icecap.

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there are no categorical answers, because different factors are relevant to different people and there is no definitive way to measure how durable functionality actually is. But, in order to try to gauge the general feeling on this topic after having mulled these questions himself, expedition-hardened WSA-contributor Till Gottbrath asked some independent 'gear heads' for their opinions and experiences.

"I bet there is nobody working in the outdoor industry, who has not faced a complaint or a return issue: "My jacket is leaking" – "The zip of my tent doesn't close anymore" – "The soles of my boots are loose", and a myriad others. Outdoor activities such as climbing in rock and ice, trekking or even travelling around the world with a rucksack, imply more use and abuse of the gear than most other sports. To make the whole subject more complicated, the kit should be as light as possible as it is carried around on one's back most of the time. Having had similar experiences in the past to those mentioned above, I was really curious to hear what our experts would say," said Till.

Demands and intensity of use

The demands on so called 'expedition suitable clothing' are definitely high. In most cases it means indestructible protection from the elements. Doubtless, it was W.L. Gore with variations of its 3-layer-laminate Gore-Tex membrane that dominates the market. To a lesser extent, BHA's eVENT or Dermizax or Entrant from Toray are also players in this field. All manufacturers use 3-layer constructions, as this is definitely proven to last the longest, but how long is that?

One reason that durability, or the lack of it, has not been tackled in more depth is probably due to the amount of time performance clothing is actually worn. As freelance journalist and WSA contributor Ralf-Stefan Beppler commented, "Remembering my times in a retail shop, I would say that we occasionally lost a jacket customer for ten years, as he was totally over-equipped with what he had just purchased." Alpin magazine's Olaf Perwirtzschky agreed, "Mr Joe Average doesn't spend more than four weeks per year in the mountains, in wet weather conditions — even less. So, he will be more than happy with just such a jacket for many years." So, from this standpoint it would seem that with such infrequent wear, the durability offered by the garments on the market is more than adequate for the consumer's needs and can last for years.

Extreme conditions

But, under real expedition conditions, the results are quite different. It is estimated that when in constant use such as when it is worn by a mountain or wilderness guide, the garments last for less than a year. "This may sound short," says Tjeerd Visser of OpPad in Holland, "but considering the performance of these jackets and how lightweight they are today, I would say it is fully acceptable."

Is a year too short? Once again there is no definitive answer to this question, but, when compared with other situations, a year is arguably an acceptable lifespan. In the case of a year-long expedition, the garments can justifiably be described as workwear. As it is common practice, in large organisations at least, to replace workwear, such as high visibility gear, on an annual basis, it would not appear to be an unacceptable period of time.

But it's not all good news. Those interviewed all agreed that they would like to see a bigger offer of super-heavy duty gear. Beppler argues that some ten or 15 years ago, there was a much broader range of jackets with very high abrasion resistant outer fabrics, but that "the market put pressure on the manufacturers to make the gear lighter." Frank Wacker from German 'Outdoor' magazine agrees, "Only a few brands such as Klettermusen from Sweden, dare to make really 'bomb-proof' garments."

A wet bottleneck

Looking at the components in this garment category, there is a very common sense that the bottleneck in terms of durability is the DWR finish. Everyone agreed that the average 'durable water repellency' does not deserve the "D". Boris Gnielka from 'Outdoor' in Germany says: "Of course, the DWR has improved a great deal in recent years. Nevertheless, there is quite a long way to go until it achieves the same lifetime performance as other components." What makes this problem even worse, is that the DWR is essential for the breathability. All the specialists confirm that they frequently receive enquiries from readers who feel damp in their jackets, even though the membrane or the coating is definitely not leaking. But this problem is not insurmountable.

Re-impregnation is generally possible for the end-consumer, but some claim that this doesn't last long enough either. Tjeerd Visser states, "From our testing, I would say that the maximum durability of a re-impregnation is only until the next washing." He thinks manufacturers, retailers, and the media share a high responsibility to be honest and also educate the consumer. Olaf Perwitzschky fully agrees: "We try to tell our readers what they can do in terms of care and maintenance."

But, as with everything in this industry, it is constantly moving forward and the durability and standard of re-impregnation products is also being enhanced and improved upon.

Cleaning up re-impregnation

Nikwax, a UK-based manufacturer of cleaning and waterproofing products launched its new improved waterproofing fabric formulations for TX.Direct Wash-in, TX.Direct Spray-on and SoftShell Proof Wash-in at Messe Friedrichshafen in July.

The new improvements are said to offer 50% better value - improved water repellency so less frequent applications are needed; better water

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beading on the surface of the fabric; enhanced cross-linking of Nikwax's Elastomer to give better stretch and resilience; and increased resistance of the water-repellency to UV degradation.

Nikwax has even gone so far as to collaborate with Siemens to design a washing machine with a wash and waterproofing 'intelligent' programme, which optimises the cycle temperature and amount of water used in the drum. The machine programme also synchronises the number of cycles to help the products penetrate garment fibres.

Nick Brown, founder and MD of Nikwax explains, "Improving the water-based performance of our waterproofers helps consumers get more from their gear."

Paying the price

Delamination also remains a sticking point in terms of longevity. No matter which supplier or which manufacturer, delamination will occur sooner or later. However, this is one area where the saying 'you get what you pay for' is very apt. More expensive fabrics tend to maintain their lamination a great deal longer than lower end products. Tjeerd Visser remarks, "Particularly over the long term, I see a real difference between branded products and many no-name or proprietary fabrics."

As with any garment, whether it be performance apparel or standard clothing, the quality of the product naturally has a marked effect on the lifetime of a garment. Perhaps it is a stiff hook-'n-loop that catches the fibres of a rip-stop fabric, a watertight zip that is not sewn in and taped in the correct way, a combination of heavy-duty with lightweight fabric but unfortunately not in the right position, or simply poor seam taping. All the experts approached considered that increased price pressure leads to less time in prototype testing and a less stringent quality control procedure. As a rule of thumb, this risk is smaller among bigger brands using well-established, branded fabrics. But there is no rule without an exception. Conversely, there are some small specialist brands that are obsessed with quality.

Lightweight can be heavy stuff

Looking specifically at lightweight gear, another important factor is relative to price. Of course, every reasonable person should appreciate that lightweight and small packing must mean making a compromise. But how long should lightweight garments realistically last? According to Olaf Perschwitzky, lightweight waterproofs' durability is basically sufficient, "As long as you use them as a just-in-case product, they do a good job. However, I am not sure how long they would last under a rucksack shoulder strap." This is where Boris and Frank from Outdoor see clear limitations: "We have found the lining of 3-ply jackets being destroyed by the hard edge of a belt within one day. On an ultra lightweight, the zip puller of a fleece jacket can already have a destructive effect. In this product category, the user has to be really cautious with such little things. Also the outer fabric can sometimes be very, very thin."

But lightweight gear is not designed to be worn in extreme conditions and fulfils its role well, meeting the criteria required of it – a lightweight garment designed to be worn for short periods of time. Nobody would expect a bikini to offer protection or keep them warm when diving at 200 metres, so people should not expect lightweight garments to offer the same durability as those that are designed for more extreme conditions. And, despite the criticisms made by the specialists we spoke to, they all agreed that they do love their lightweight equipment and use it very often.

First and second are strong

Looking at base layers and fleeces, our experts are more than positive. Beppler says: "I don't know exactly, but I would say that my oldest first layer products from Craft and Helly Hansen might be some twenty years old. Of course, there is some pilling and little bit of snatching, but they still do their job. It is really amazing".

Concerning fleeces, Tjeerd Visser discovered a very convincing detail in his wardrobe: "There has never been a need for me to get a new fleece jacket because the old one was worn out. They always totally went out of fashion before that. Sometimes it was me who just couldn't bear seeing them anymore. Of course, there is pilling, the fabrics gets thinner on the cuffs, collars and elbows, but still it doesn't look too bad."

However, big differences in quality can be found on brand new garments. Boris Gnielka comments, "It would be wrong to talk about fleece in general. Sometimes brand-new stuff looks bad. Just have a close look at some 3-in-1 jackets. The quality can be so poor, that the pilling starts before people use the product!" And among branded fleeces, he and Frank Wacker are sure that certain colours are simply more prone to thinning than others.

Each to their own

Despite the fact that some may believe that durability, or the lack of it, is a shortfall in the field of performance clothing, the experts we spoke to seemed to be pretty impressed with products available. It appears that while there is still some



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way to go before the 'indestructible' product is developed, the apparel on the market is meeting the requirements of most consumers. As mentioned, durability is a subjective topic and whilst one consumer may be happy to replace a garment every six months another may expect it to last for ten years. But this is true across the spectrum of consumer products, not just for functional apparel.

The apparel on offer to consumers is as wide ranging as the consumers themselves, so people have a choice as to which functions they require and how much they want to spend. One indisputable fact is that quality products — which usually carry a higher price tag — generally last longer and maintain their functionality longer, but this is by no means unique to this sector. As with any consumer goods, it is up to the individual to research the products and find the one that suits their needs. And for those few consumers who expect their functional apparel to last for a lifetime, just as the secret of eternal youth will continue until it is discovered, fibre developers will continue their quest to discover eternal functionality. And in the meantime, things can only continue to improve.

- **Ralf-Stefan Beppler**: With a long record of working in a retail shop and in marketing on the manufacturers side, Ralf-Stefan is a well-reputed freelance gear writer.
- **Boris Gnielka** is the senior gear editor of the German magazine "Outdoor" and has been testing as well as writing about gear for many years.
- **Olaf Perwitzschky**: Being a professional Mountain Guide, Olaf brings the right background for being gear editor "Alpin" magazine in Germany. There are rumours that he eats ice screws.
- **Tjeerd Visser** has been leading the gear wrecking crew of the Dutch magazine "OpPad" for many years. He also did some long-term testing on jackets.
- **Frank Wacker** is the other gear editor of Germany's "Outdoor". Rumours say that he owns more sleeping bags than briefs.

Needless to say, that all contributors have a good record of outdoor experience…



Frank Wacker from German 'Outdoor' magazine



Boris Gnielka from German 'Outdoor' magazine

