

Fun rope climber is this year's winner

The ACX Power Ascender was the victor when the Grand Award of Design was awarded in May. Or – to be more specific – the device's manufacturer ActSafe and “design supplier” Shift Design & Strategy were the winners. The jury statement says the winning product “revolutionises” the climbing activity it is designed for. What's more, it guarantees “driving pleasure”.

By **Lotta Jonson**

BUT HOW CAN A ROPE WINCH BE REVOLUTIONARY? And exactly what do they mean by “driving pleasure”? Teknikföretagen (The Association of Swedish Engineering Industries), which organises the Grand Award of Design, seems to like macho advertising words. More than serious explanations?

“No, it's not like that,” says Pär Bergström of Shift Design & Strategy. “The words are accurate – I can explain...”

Bergström is responsible for the design of the ACX Power Ascender. It is actually a third-generation power ascender but he says it has undeniably (together with its predecessors) radically changed the work of professional climbers who must

descend into deep crevasses or ascend heights.

To clarify, the ACX Power Ascender is exclusively a work tool and not something for hobby climbers. It helps maintenance workers when a ladder or aerial access platform can't reach. It aids rescue personnel and makes law enforcement assault teams much more effective. Previously, people climbed a rope, used their arms and pulled themselves up along a line. All this clearly puts wear and tear on the body. There is no comparison to today's situation when an ACX Power Ascender takes you up and down almost effortlessly.

And the driving pleasure?

“Driving a car is a horizontal activity – here the journey is vertical,” Bergström explains. “All the previous mechanical winches were jerky and intermittent. We wanted to create a smooth movement with the exact same response as a motorcycle – agile to drive. The user should feel safe and have control of the situation. The ACX Power Ascender works in exactly this way. So the term ‘driving pleasure’ is accurate.”

The ACX Power Ascender is powered by a motor that runs on rechargeable batteries and is operated directly or by remote control. It is small and compact, measures only 33 x 28 x 27 centimetres, and weighs 13 kilos including the battery. It can take a load of 200 kilos and has an ascent rate of 0 to 24 metres a minute, depending on what it is being used for.

Far-sighted owners

ActSafe, which manufactures the ACX Power Ascender, was founded in the 1990s and launched the world’s first motorised “power ascender” rope climber in 1997. In conjunction with a change of ownership, the company was forced to tighten its business focus. It decided to concentrate more on rope-climbing technology. The new owners were far-sighted and insisted that management hire a designer for the continued development work. A design agency named Hampf Industridesign was recommended, and Pär Bergström worked there. Hampf Industridesign later merged with the design agency Stinct and became Shift Design & Strategy. And that was how it happened.

“Our first project started in 2005 with a tiny budget and extremely limited production possibilities,” Bergström remembers. “But we had to adapt accordingly. Over time the response from our customers made the company realise that the investment in the design had paid off – right after the first ride.”

During this period, the company developed from being a small business with small resources into today’s export company with sales of almost SEK 50 million (EUR 5.2m).

When Bergström joined the company and the business took off, ActSafe needed reinforcement on the engineering side of things. He connected the company with a skilled design engineer eager to be involved in developing an engineering design department. ActSafe now has some 20 employees at its head office in Lindome outside Gothenburg, plus many regularly consulted experts outside the company.

“This has been my longest job relationship – we’ve been working together for more than ten years,” Bergström says. “One ActSafe project has followed another – always with interesting products. But for me by far the most important thing has been to see how the company and its attitude towards design have changed. Today nobody there questions whether design is worth it.”

Everything is connected

As mentioned, the winner of the 2017 Grand Award of Design, the ACX Power Ascender, is the third generation of its kind. In describing the latest version it is impossible not to also speak

about its predecessors. Everything is connected and the design work has progressed in a kind of logical order. But how, exactly? The question goes to Per Bergström again:

“There are major differences between the first generation and the latest one in terms of both their exterior design and technology. The first commission was to transform the first model, which already existed and was petrol driven, into an electric one. The demand for electric operation came from the German windpower industry, which had shown an interest in the petrol-driven model. At that time the external design was fairly unimportant; the commission then had very little to do with the aesthetics. Different production techniques require different investments. For example, to modify the shell into a more visually appealing plastic casing would have meant a major investment back then. In the first generation we used aluminium extrusion. It’s a relatively cheap manufacturing method but offers limited external design possibilities.

“In any case, the response was above expectation. Since then the technology has been developed, especially regarding the power supply, such as the battery size. The award winning ACX Power Ascender is more compact. It is more intelligent electronically than previous versions and has rechargeable batteries. Assault teams are a relatively new user group. One request from them was to make it watertight. Now you can’t even insert a nail file inside the shell, it’s that tight.”

In brief, the different generations of power ascenders are as follows: The first one could only be used to ascend; then the user had to release it and glide down. The second generation could go both up and down via a switch. Today’s prizewinning third generation can be operated both up and down without a switch, has replaceable batteries, and can be remote controlled from the ground, which can be useful when it is used as a top-mounted winch. Or if an accident happens and the individual in mid-air becomes unconscious.

“Developing a product like this is a team effort. It does happen that several people from Shift Design & Strategy work on the same project but usually not. We’re a small, tight-knit gang of only four people. Often we all get drawn into a project because we often toss ideas back and forth across our desks. But only one of us is responsible to the client and in this case it has always been me. Our customers often can’t afford to have more than one designer involved and we also need to achieve a certain level of efficiency.”

In contrast, ActSafe has always had several people involved in the development process, which is led by a project management team. It includes engineers who know everything about climbing and climbers’ needs. Focus groups have continuously answered questions like “What do you think of this function?” or “Are these in the right place?” Various experts have also been brought in during the process: battery developers, electronics experts and so on. Not to mention safety experts: the demands on this type of product are extremely high. Naturally the company must closely monitor all these aspects.

Well-known design process

Pär Bergström explains that all design processes, including this one, follow more or less the same stages. The work always begins with a period of sketching with paper and pens. At first there is a lot of scribbling but this is important in helping the ideas to mature. The sketching then continues digitally in some form. When working with more complex products, designers must switch to a 3D environment early on so they can get a grasp of the product's external form.

“Over the years I've learned that if you don't go up to actual size soon enough, it's easy to end up down a one-way street. We use models as often as we can,” Bergström says.

“On a design palette I'm a bit closer to the technology end than to the pure form aesthetic. I find the technology very interesting. Some designers work exclusively with the external form – they might use an engineering team to adapt the engineering design to the desired form. I work more from the other direction. I try to make progress and solve the problem together with the engineer. To figure out how we can package the product so that everything is in line with what the company wants to convey.”

Before the ACX Power Ascender was launched in November 2015, work with this particular model had been going on for about 18 months.

“In this case I've also been involved in some of the related work – the documentation, marketing materials for the website and so on.”

Classic problems

Most design jobs start with a commission that formulates the project description and the desired result. Bergström can hardly remember how things began with ActSafe.

” Over the years I've learned that if you don't go up to actual size soon enough, it's easy to end up down a one-way street. ”

“One general problem for all small companies is that they're not used to writing optimal project specifications. And in some cases the development process of the specification (plus all the thoughts about what the product could become) needs to occur to some extent in parallel with the actual development of the product. Unfortunately this can take a lot of time. Perhaps after a while, you might realise that this or that solution doesn't work and you have to do something else instead. Then you have to back up in the process. Some parts of this project have been well specified whereas others have not been so well described from the start. But with the very latest version – the award-winning one– everything went very smoothly. Of course the better you get to know each other, the better the process goes.”

Pär Bergström says many design commissions share the same major challenges: weight and size. An optimal product should weigh nothing, take up little room, and still be operationally reliable: all classic problems in any industry.

“We achieved the operational reliability. Our weight goal was between seven and eight kilos. We got to just over that. It was extremely tricky to fit all the components in, because the motor also had to be watertight. But we succeeded. And the fact that we won the Grand Award of Design for the ACX Power Ascender is good confirmation of that.”





Magnus Glans, CEO ActSafe

Design made the difference

The cause of the successes that ActSafe has had with its “power ascender” rope winches is spelled *d e s i g n*, confirms Managing Director Magnus Glans.

HOW IMPORTANT HAVE THE ACX POWER ASCENDER AND ITS PREDECESSORS BEEN TO YOUR COMPANY’S DEVELOPMENT?

When I joined ActSafe in 2005 the company was active in several different fields: providing training for aerial work with climbing equipment, manufacturing climbing harnesses and other equipment for work/rescue at heights and more. At that time there was a power ascender powered by a petrol engine. It is still sold today and has merely been developed somewhat since then. It was not designed and looks a bit like a motor with some equipment hanging from it (see the photo). It is noisy, emits waste gases and can only go up (which means that the user must still have extensive knowledge about rope techniques).

ActSafe was running at a loss; the company lacked focus and a sustainable plan for the future. Our main market was Sweden. The power ascender was only responsible for a small proportion of the sales revenue then but was the part of the company with the most potential. We decided to invest everything in further developing this product and focus less on the other aspects of the business. Because this is a very much a niche product we were forced to also start selling more outside Sweden so we could achieve sufficient volumes. In conjunction with the decision to focus on power ascenders, it was decided that the new machines would be driven by a battery and an electric motor instead of petrol engines. Our owners also demanded that we use an industrial designer, something which at that time I was against, as it was a large cost when we were already under financial strain.

Focusing only on power ascenders and exports turned out to be the right decision. Today 90 percent of our sales revenue and 95 percent of our business dealings involve other countries.

WHAT IMPORTANCE DO YOU THINK THE DESIGN HAS HAD TO THE SUCCESS?

Hiring the services of an industrial designer and focusing only on power ascenders are the two decisions that been most important to our success. The ACC I, our first battery-operated power ascender, was launched in 2007. In terms of performance, it was not revolutionary compared with our previous models or with our only competitor at that time. What really made the difference was the design. The ACC I was user friendly, felt right, and exuded safety, quality and innovation. In my view this was decisive in making us the acknowledged market leaders in our niche today.

CAN YOU SAY ANYTHING ABOUT THE RELATIONSHIP BETWEEN THE TECHNICAL AND THE AESTHETIC DEVELOPMENT OF THE ACX?

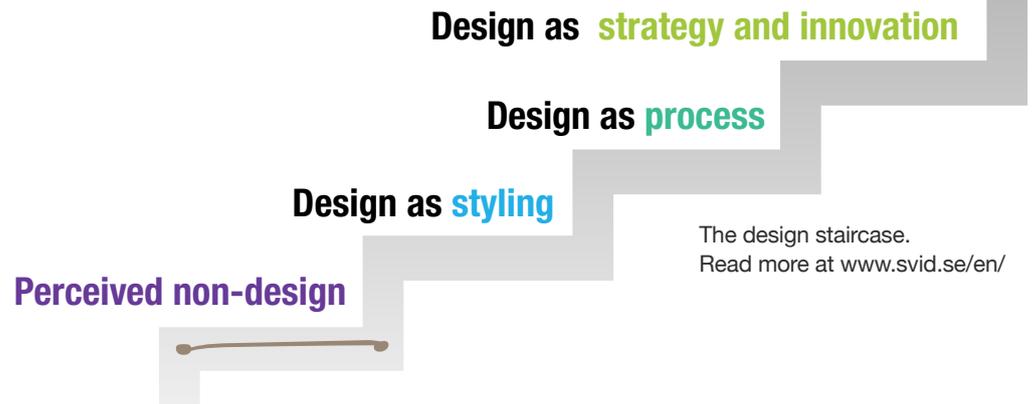
That’s an interesting question. The technical development is governed to some extent by what batteries and motors can cope with. There have not been any revolutionary advances in performance yet, simply because the technology won’t allow it. What we have succeeded well with is to make the ACX smaller, lighter, safer and even easier to use. This has also led to more efficient production, as all our product versions (for industry, the rescue services, the military etc.) are based on and produced from the same platform. I would say that the aesthetic development has advanced further than the technical one. As the company grew we gained greater resources to invest in the design of the ACX compared with its predecessors. With the ACX we’ve set a new standard. It’s become easier to sell it to larger customers because it’s seen as a good-quality, capable product in its field of application.

HAS YOUR ATTITUDE TOWARDS DESIGN CHANGED DURING YOUR TIME AS MANAGING DIRECTOR OF ACTSAFE?

Absolutely. The successes with the ACC I were what made me understand the major – and indeed decisive – importance of design. Since then we’ve always included design when discussing our products or product changes.

When we develop new products, design is one of the first things we discuss and then the engineers and Pär Bergström work together to find the best solution. ■





“The research should benefit everyone – not just us”

This year is the fifteenth time Teknikföretagen has awarded the Grand Award of Design. Shift Design & Strategy became this year’s proud “design supplier” and thereby the recipient of the SEK 250,000 (EUR 26,000) in prize money. The rules state that half of it must be invested in research.

So what are your thoughts at Shift Design? What will you invest the money in?

The question was put to Pär Bergström, who has been Shift Design’s representative to ActSafe and been responsible for the ACX Power Ascender.

“We don’t really know yet – we’re still discussing it. We’re asking ourselves what we’d like to achieve with the research. One thing is sure at least: we don’t want the money to benefit us primarily; we want to go further. Preferably it should contribute something to the design field as a whole.

“There are no huge sums of money involved, so we will have to try to find some organisation or activity that can help to gear up the money. One issue I personally have been

considering is how to motivate more people to use design. To dare to use it. In our field, all industrial designers know about the so-called ‘design staircase’ but sometimes it’s far too theoretical.”

The concept of a design staircase has been used by such design actors as SVID for many years. The use of design is illustrated graphically

in the form of a staircase. At the very top, on the fourth step, is written “Design as strategy and innovation”. Before getting there, a company must pass steps one and two, “Unconscious design” and “Design as external appearance” and also reach step three, “Design as process”.

“When we reach out to small and medium-size companies it is sometimes overwhelming to start talking about all the steps in the design staircase and how design drives profitability. For us it’s often really just a matter of helping them up onto the first step. So it would be fantastic to find a way to achieve this.”

Do companies still not understand that design pays off?

“No, not really. And in the past few decades even more obstacles have popped up. One is that everything’s happening so much faster nowadays. Digital products are being developed at lightning speed. Physical products take time to develop – for various reasons. But the digital world is speeding up the tempo, which is considerably higher now than when the theories about the design staircase were formulated. Often people are still discussing the entire staircase and how important it is to reach the top step. But these days companies don’t have the patience to absorb everything. I’d like to get them to at least take the first step. Then a lot has been gained because they often keep going by themselves. Small and medium-size companies must get up onto the track – on the design track.” ■

