

# treemagineers – a selection of recollections and observations

In the following article **Mark Bridge** takes a moment to sit down and think back to a number of things that have occurred since he, **Chris Cowell** and **Bernd “Beddes” Strasser** founded treemagineers quite a few years ago. The interesting thing about this process was that in the end it was about more than just treemagineers, rather it became about how the arborist industry as a whole has developed over the years.

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Like many things that develop into something good, treemagineers had a humble and unpromising beginning: three friends messing around with ropes and hardware in a kitchen.

To be precise, this was in 2004 at my place in Basel, Switzerland, Chris Cowell, Bernd “Beddes” Strasser and others had come to Basel after a very heavy, wet snowfall which had caused a lot of damage in the region, especially to birch trees and Scots pines. We took the opportunity to gain clarity on how to proceed with a number of discussions we had been having. Was there enough substance to develop it into an actual project or enterprise? Was there an opportunity to actually do something to improve the deficiencies we perceived in the equipment we were using at the time - or were we doomed to whinge about it for years to come?

At this point Beddes had been working on a concept for an arborist harness for some time, Chris and I had been discussing configurations of hardware and ropes during work which were commonly used for arboriculture work - and how they could be improved - whilst we were working together.

The discussions in the kitchen were punctuated by copious amounts of coffee, as well as a plethora of pieces of hardware and rope (which would later become the pulleySAVER) scattered everywhere, draped over the extractor fan piping. The result? We concluded that we should give it a shot - because

after all, what did we have to lose?  
And the rest, as they say, is history.

In retrospect, I sometimes wonder whether we would have dared to take this step into the unknown had we known how much time, effort and energy the whole thing would cost. But it's probably good to approach such ventures with a degree of naivety - otherwise no one would ever take a risk.

For us, at any rate, the decision was to have a profound and lasting impact on the years - and decades - to come.

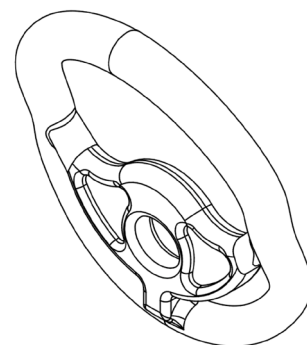
## The origins of treeMOTION

Around the turn of the millennium, the development of climbing harnesses in arboriculture was pretty much stagnating. The last push of innovation had come from François Dussenne and Fred Matthias with the harnesses they had developed in a collaboration with Comet: the Vert, the Evolution and the Butterfly, as well as the climbing harnesses ArborMaster had developed with Buckingham.

Enter Beddes with his ideas of how much more a harness could be.

Beddes is one of those rare people who have that creative, ingenious spark that allows them to see things in a way that others miss - whether it's in the approach to a climbing sequence or the solution to a technical problem.

The harness concept he was working on was based on a novel type of hardware that would connect the upper and lower parts of the climbing harness. This allowed the webbing to move freely, resulting in a more ergonomic harness with greater range and freedom of movement. For the first prototypes

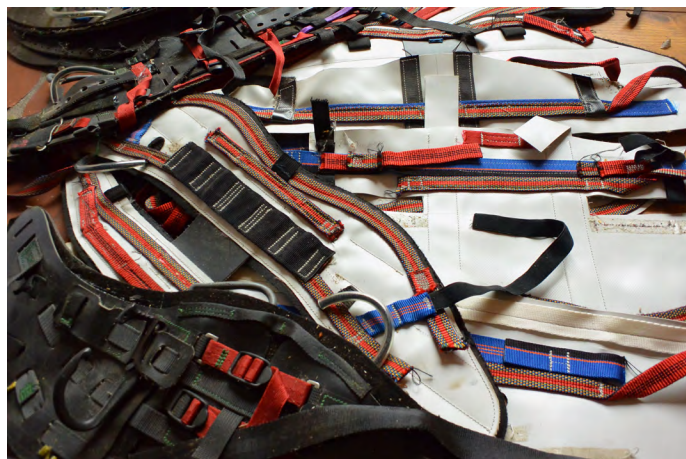


*Drawing of first version of the complex ring*



*Three very young treemagineers in 2006, from left to right: Chris Cowell, Mark Bridge and Bernd “Beddes” Strasser*

of the harness, Beddes used hardware he had made from wood. In addition to the innovation of the complex ring as front hardware, the use of a stiff yet supple base material was another step that allowed for a radically new type of harness construction. This new approach to harness construction meant that the pressure exerted on the climber's body is distributed over a much larger area.



*A peek into the workshop: a stack of harness prototypes*

Until then, it was common practice to counteract pressure points by padding the harness straps. Beddes's solution, however, was to distribute the weight over a wider area with several layers of parallel webbing to reduce the pressure. All of this resulted in a climbing harness that took a radically new approach – that was innovative, a departure from what had existed up to that point.

While this was all well and good, the obvious shortcoming was that there was no manufacturer in sight for it at that point in time. We had a working, exciting prototype that we believed in, we had a name, treeMOTION, a look - but lacked a way to produce it and to bring it to market.

### **The origins of the Hitch Climber**

The roots of the Hitch Climber date back to discussions Chris and I had while working, reflecting upon how we configured lanyards, friction hitches and climbing lines. During this period, all sorts of equipment was used for work positioning in tree care, employing a range of cross-used components from a wide variety of fields that were – more or less – fit for purpose. The classic Prusik loop and the twisted three-ply ropes of the English school were by and by replaced in the mid-nineties by modern kern-mantle lines and the Valdôtain Tresse friction hitch, but the interface with the connectors had perhaps no yet been thoroughly considered. As a rule, a wide HMS

carabiner was used for this purpose, preferably with a flat roof, to which the two legs of the friction hitch cord, a Prusik lift, such as the Petzl P05 Fixe pulley and the termination of the climbing line were attached. This resulted in a load configuration that left a lot to be desired, with a very wide load distribution as well as a high load towards the nose of the carabiner.

Our discussions revolved around the question of how this problem could best be solved. Was it simply a matter of adapting the techniques or was there a piece of specialised hardware missing for this purpose?

As time went on, we came to the conclusion that the solution was indeed a specific hardware element, but this was yet to be designed. This (and the complex ring on the treeMOTION) was to be treemagineers' baptism of fire in terms of hardware development - but here, too, things were going nowhere fast without a manufacturer.



*Traditional, pre-Hitch Climber set-up of friction hitch, pulley and connector*

### **The search for manufacturers**

What followed was a restless period of searching for suitable manufacturers who would be willing to work with us - a rather daunting task considering that we had little to no experience in this field.

Moreover, there were few comparable reference points at that time. One of them was Arbor Master with Ken Palmer and Rip Tompkins in the US, or Treevolution with Liam McKeown in the UK. These two companies were founded and run by arborists. They had a number of strategic partnerships with manufacturers of hardware and textiles, as well as with manufacturers of power tools, such as chainsaws.

So that was the direction in which we started looking. We found that manufacturers were generally very open to discussion so long as it was about being shown our ideas - but less willing to commit to specific things. In retrospect, we found that at this stage it is terribly easy to give away a lot of ideas and know-how without any return. This is difficult to avoid, as the problem is that you do not get closer to the goal if you are not willing to give anything away for fear that a concept or item might be copied. Interestingly, Petzl was the only manufacturer that communicated openly and honestly on this matter.

They declared very clearly that they were open to discussion, but that they wanted us to register our designs first, because if they liked what they saw, they would adapt and use it.

In fact, in the early days, Petzl was in many ways one of the reference points for us in terms of the thoroughness of the design and the documentation of their products. In 2005, we travelled to Petzl HQ in Crolles, France, to discuss a possible collaboration. We visited V-Access, Petzl's impressive training centre, and spent a day surrounded by the iconic designs we had worked with for years - eventually, however, it became clear that the collaboration would involve exclusivity for Petzl, so we declined, preferring to remain on friendly terms. At this point we were already focusing on DMM as a strategic partner for hardware.

Liam McKeown from the Snowdonia-based training company Treevolution introduced us to DMM and in particular to Fred Hall, which was to have a lasting impact on treemagineers' future path. Considering we had no established track record, we were naturally an unknown quantity to any potential partners. Looking back, I try to imagine how manufacturers must have perceived us back then. As people with interesting ideas? Ideas that might at best only appeal to a small niche - if any at all? Be that as it may, DMM decided to take the risk, even though the partnership only came about after a false start with a two-year delay.

The association with DMM allowed us to move forward with two projects: the complex ring required to make treeMOTION and the pulley for the Hitch Climber. The Hitch Climber pulley went through a series of development steps before ending up in the form that many may still be familiar with today. Originally it was a pulley with two holes and a third small hole for a cord or bolt (to fix the side plates). Chris came up with the idea for a full third hole during a development session, this would allow for many additional configurations - actually in hindsight a logical thing to do, but something no one had thought of or seen the need for up to that point.

The decision to enter into a strategic partnership with Teufelberger for the production of textiles also fell into this period. After a long, unsuccessful search for a manufacturer in the field of textiles, we were slowly running out of ideas when Chris suggested that it might be worthwhile to get in touch with the manufacturer of FSE Sirius, during that time a widely used and highly valued friction hitch cordage. It turned

out that FSE is a brand owned by Teufelberger, an Austrian manufacturer which had been unknown to us until then. We contacted Teufelberger and arranged a meeting in Basel. The day of the meeting was stormy and there had been heavy, wet snowfall. So when Markus Langanger, Teufelberger's representative, showed up, we decided to move the meeting to the warmth of a café across the street from the yard of my former company. Every time I think about it, I have to smile when I imagine the meeting from Markus' perspective: he must have arrived in Basel a bit frazzled, after just having driven seven hours from Wels in Austria, where he was promptly set upon by enthusiastic arborists he had never met before, to then be whisked off to a café. There, in a humid and damp atmosphere, surrounded by slightly perplexed elderly ladies drinking coffee, he was shown all sorts of tree care configurations in rapid succession - on a coat stand using a coat hanger as a makeshift anchor point. When Markus drove back to Austria at the end of the afternoon, in all likelihood more than slightly dazed and confused, Chris and I were really not sure what would happen next. To everyone's great surprise, Markus got back in touch to let us know that Teufelberger was interested in moving forward with the climbing harness project, but that it was up to us to provide proof that the harness was indeed certifiable. Consequently, we contacted a certification body and had the harness certified according to EN358 and 813 (by then using more conventional aluminium hardware provided by DMM, not the wooden prototypes!). The final hurdle was the other condition that Teufelberger had made, which was that we would have to organise the first 500 harness orders to justify them ramping up their production.

At this point a big thank you is due to Tobe Sherrill, Robert Knot, Honey Brothers, Freeworker and Jelte Buddingh, because without their belief and commitment there would have never have been a treeMOTION - and treemagineers would have been nothing but a pipe dream.

To this day, launching a product is always a nerve-racking affair. Of course we believe in the concept, but the confirmation only comes when the dealers and end-users are equally convinced. What made the launch of the climbing harness even more nerve-racking was the fact that the whole thing was financed by the three of us. We were clear from the beginning that we wanted to be independent and free of debt. This was a conscious decision so that we would retain the freedom to make decisions and pur-



sue projects as we pleased, plus we wanted to make them free from any kind of outside financial pressure. The flip side of the coin was that we had to finance treemagineers privately for years and it would take quite some time before we could cover the costs - or better still, generate some income from it.

A central premise of treemagineers has always been that we do this because we enjoy working together and enjoy the opportunities the project offers to give something back to the tree care industry. Conversely, we want to have the freedom to get out if we no longer enjoy it - therefore this meant that investors were never really an option.



*From first prototype to the classic Hitch Climber, through to the Eccentric: the evolution of the Hitch Climber*

The launch of treeMOTION and Hitch Climber  
The launch of treeMOTION and the Hitch Climber took place in 2006 at the International Society for Arboriculture's International Tree Climbing Competition (ITCC) in Minneapolis, MN (USA), which Beddes and I took part in. Beddes used the pre-certified prototype harness, we both climbed with pre-production Hitch Climber. We showed up for the gear check with a binder full of documentation and test data. Needless to say, there ensued an interesting gear check.

This first public presentation of the treeMOTION and the Hitch Climber, with which Beddes won the championship, caused quite a stir and was the starting point for something that has grown and grown over the years. Building on the Hitch Climber and treeMOTION, a more or less sustainable financial basis was created that enabled us to push ahead with the development of other equipment and projects. Over time, other products were developed with great attention to detail - and these in turn generated income that enabled us to pursue and fund further projects.

### **Chemistry matters**

This is perhaps a good time to reflect upon why the chemistry within treemagineers worked or how we divided up who does what. Chris, Beddes and I share many similarities, most notably that all three of us

are practicing arborists. Yet we each bring our own specific skills to the table: It goes without saying that Beddes is an exceptional climber. After all, it's not by chance that one wins the ITCC nine times. In addition, he brings a unique perspective. Chris is meticulous and very structured in his approach. Without his technical skills and organised mindset, much of what we have achieved with treemagineers would simply not have been possible.

I have always enjoyed communicating concepts and techniques in workshops and at events as well as explaining the thought process behind the products. Of course, this is a gross oversimplification of how treemagineers works, but it has proven helpful over the years that each of us has areas where we feel comfortable and can contribute to the project.



*Winning! Beddes during the 2006 ITCC Masters Challenge in Minneapolis, US*

### **It's not only about gear**

The vision we had and have for treemagineers is that it should be more than just a commercial venture. We do not see ourselves as just developers of equipment, but rather that treemagineers offers the opportunity to learn more about topics that interest us, to dig deeper. With this in mind, we have been involved in a number of projects over the years, such as the HSE and Forestry Commission rigging research, as well as looking more closely at a variety of other topics through testing, such as the compatibility between ascenders and climbing ropes, testing rigging systems, the effects that abrasion has on hardware, the configuration of connectors or how stitched terminations behave under high cycles - to name but a few. We have always believed that a deeper understanding of the subject matter is essential for high-quality product development and leads to a safer, better-thought out product. But it takes time and effort to dig deeper, there is no doubt about that.

In addition to working with our strategic partners, we have also been involved in other areas. Over a long period of time, treemagineers was involved in the ISA Tree Climbing Championships, offering workshops around the event, contributing expertise,

e.g. on the ITCC Technical Advisory Committee, or climbing as a participant or volunteering to help organise and run the individual disciplines.

Another milestone in the calendar, in which we are still heavily invested, is the Climbers' Forum at the German Tree Care Days in Augsburg. This annual gathering has developed into a premium event that is unique in the world, showcasing the culture of climbers in arboriculture. Not only has a lot of time and effort been invested, but also financial resources, for example, treemagineers invested in the development and manufacture of the climbing tower, a tree stand and continue to provide the equipment needed to coordinate the Climbers' Forum. From a purely business point of view, this kind of investment may seem questionable, but for us it was about giving something back to the industry as an appreciation for the trust people have placed in the products we were involved in.

### treemagineers as a brand?!

Once the strategic partnerships had been established with DMM and Teufelberger, a very productive period of PPE and rigging product development and production followed. In parallel, as is probably inevitable, the perception of a treemagineers brand evolved, which seemed to suggest that the products we were involved in were per se high-end. This was never our intention - and so some products were deliberately tailored to counteract this.

A good example of this is the multiSAVER. In our opinion, the ring-to-ring cambium saver is representative of the elegance of some of the equipment



used in tree care, where often simple solutions solve complex problems – so we were keen to pick up on this theme (the original ring-to-ring cambium saver is credited to François Dussenne, Fred Matthias and High Tree Tech).

The fimblSAVER is another variation in this product family.

Another measure we took to change the brand perception of Treemagineers was a blog on our website. For many years, I used this blog to write about topics that I found interesting, funny, annoying or simply worthy of discussion. For various reasons, the blog

has gone quiet in recent years, but who knows, maybe it will be revived in the future.

### The Pinto Story

Another important product that should be men-

*“I don’t know about names, but it sounds like a pulley I need to own”.*

Richard Allmond

tioned here is the Pinto pulley.

The Pinto is basically the pulley we always wanted when we were still climbing with the Petzl P05, which had a becket of sorts, but not really.

Together with DMM, we set out to create our vision of a rope-friendly version of the P05 - with a true load-bearing becket to which things could be at-



*The Pinto pulley in action!*

tached and with an attachment point that was equally suitable for textiles or connectors.

This proved to be much more complex from a manufacturing perspective than originally anticipated. Despite the resulting delays, we still didn't have a name for the pulley, so we sought help from our friend Rich Allmond. Upon hearing the features of the pulley, Richard said, “I don’t know about names, but it sounds like a pulley I need to own”. No, the name does not refer to a small car model that Ford produced from 1971 to 1980. Nor does it refer to a piebald horse. Rather, it is an acronym for “Pulley I Need To Own”.

DMM's ability to hot forge aluminium is second to none and has a huge impact on how the products we are involved in look and feel. Hot forging is ideally suited to creating rope-friendly surfaces - and on top of that, the products look stunning. Another person



who has contributed significantly to the look and feel of the products is Elliot Tanner, a Wales-based designer who started his working life at DMM before setting up his own company. For many years treemagineers have worked with Elliot because of the high quality of the designs he creates. The combination of DMM, treemagineers and Elliot has enabled the development of equipment that we are still proud of and excited about today.

### **The CEclimb story**

The 17 year-collaboration between Teufelberger and treemagineers revolved around developing textile-based products, such as the rope tool range, a range of climbing harnesses and climbing and rigging ropes. A very important - and sadly underrated - development for us was the CEclimb. This has its roots in the discussions that took place mainly in Germany in the first decade of the millennium regarding the legality of knot-based work positioning systems. At the time, there were voices within the Gartenbau BG (German health and safety body) that claimed that only mechanical work positioning systems were certifiable and therefore legal. We disagreed, believing that the arboricultural industry has historically had a wealth of experience in the use of knots and hitches, therefore saw the need to develop a hitch-based

work positioning system. CEclimb was the result of these developments, with specified components and configurations, as well as defined performance criteria and detailed documentation. The aim was to provide people in arboriculture with a benchmark or reference point for working with hitch-based systems, with clear performance criteria. The idea was not to restrict the ways in which hitches were used, but to define a configuration that was demonstrably safe, from which deviations (e.g. using a different hitch) could be justified by means of a risk assessment. In retrospect, all this was probably a few years ahead of its time. Today, more and more people seem to be buying into the philosophy of certified systems, but when we launched CEclimb, the reactions were restrained, if not even slightly sceptical. Be that as it may, the issue of the legality or illegality of friction hitches was then resolved once and for all, so there was definitely something good that resulted out of the whole thing.

To continue the theme of systems with defined components, configurations and performance criteria, we also looked intensively at rigging systems. Whilst the data from that project never really saw the

light of day, we definitely learned a lot. Part of this was an epic series of tests at Dunkeld in the Scottish Highlands. These involved looking at the interaction between the slings, the rigging ropes and the rigged mass. It included many, many drops in different configurations. In such tests, some results are predictable, whilst others are surprising - and there is always much to discuss. Even though these tests were done a while ago, they have yet to be fully evaluated - but the good thing about solid data is that you can let it sit for a while and always come back to it later.

So unlike CEclimb, this project did not directly lead to fundamentally new products, but it did provide the basis for updates to Teufelberger's range of rigging ropes and slings. For those involved, the days in the Highlands were definitely an important learning experience, as it offered interesting insights into how



*Very early iteration of CEclimb set-up in 2007, pre-Ultra O, pre-Pinto, pre-production Hitch Climbers*



*Testing of rigging systems in Dukeld, Scotland, in 2014*

far properly configured rigging systems can be loaded before they fail.

### **Onwards and upwards**

After seventeen years of collaboration, Teufelberger initiated the termination of its collaboration with treemagineers in 2020, a process that was completed early in 2022. Whilst we regret this decision, we also respect it. We have achieved many good things together during this time and we hope that our joint efforts have made a contribution to tree care which has value and meaning.

This exciting new situation will allow treemagineers to focus entirely on working with DMM. We will continue to expand and advance the hardware-based projects we were already working on, but will also move into new areas.

### **A (preliminary) conclusion**

So where do treemagineers stand today?

Almost twenty years after our first chat in our kitchen in Basel? Not everything has gone smoothly, of course, but it has certainly been a very enlightening and rewarding journey. We met and exchanged ideas with a lot of different people: producers, designers, out-of-the-box-thinkers, as well as arborists from many different areas. These are memories none of us would not want to miss.

And most importantly: treemagineers is still fun, so stay tuned for more!

What advice do we have for a young person reading this article who might have ideas of their own? Many people have good ideas, relatively few of them make it from concept to prototype to production, so bring a big portion of patience to the table and do not rush the process! Be prepared to invest a lot of time and effort if you want the project to reflect well upon you. Take your time to find the right partners, don't settle for second best and don't feel obliged to accept the first offer - some people offer you the whole world - to then deliver little. Don't sell yourself short, your ideas and experience have inherent value, don't give this away for the value of a t-shirt! The mosaic of climbing arborist culture is rich and many people have contributed to it over the years, let's continue building on it together.

treemagineers - all for the trees and none for a fall!