

Egon Veit

30 Years development for mountain rescueing

After a degree in mechanical engineering at HTL Innsbruck and graduation at business College Innsbruck I had enough from theory. My next goal was the trainig to become a mountain guide. By coincidence I was offered a job at Tyromont. Combining Mountains, technics and business sounded interesting, so I gave it a try. However, Tyromont was quite 1960ies at this time, and beside mountain rescue devices, outdated scaffolds and similar was produced.

But I found working on mountain rescue devices interesting, so I gave it a try – I was 23 years old at this time. Great people and mountain rescuers like Hannes Zechel, Klaus Springfield, Walter Offner, the entire rescue station of die Axams – just to name a few - helped me a lot to get more knowledge in mountain rescueing. So the technician in me came up again and, motivated by my tutors, first ideas for new devices emerged:

One issue at this time was that it was not possible to transport injured horizontally on the available courved mountain stretchers. The issue came up with the more and more common use of vacuum matresses. I thought things over, and the result was my first „baby“:



1989: Mountain stretcher Vario

The then actual mountain stretcher form Tyromont that was built since the sixties was totally outdated. First it was extremely heavy, but most of all its curved bedding area didn't allow a horizontal positioning of the injured. This was brought on to me rookie from many sides.

This triggered my first development: Variable bedding plates allowed for a horizontal positioning of the injured, while the famous capabilities of the „mariner“ stretcher were preserved: The mountain stretcher „Vario“ came into being.

At one of the first presentations of this bright red neebie, I received a congratulation from one of the most reknowned experts of the Austrian mountain rescue service for this „mountain – Ferrari“, as he called it. To me, this was like a knightly accolade.

In the following years, this mountain stretcher was utilized by a lot of rescue stations in Austria, South Tirol, Italia, Switzerland, Norway and many other countries.

This success was a great motivation for me, and now it was time for something for my favorite season, winter:

1990: Akja 2200 plus

As the mountain stretcher was modernized, up came the next issue to modernize another over-aged Tyromont product: The Akja was built since the sixties practically unchanged. However, skiing, skiers and equipment have changed (especially the skiboots needed more room), and the use of vacuum matresses required more room in the sled. So I changed the shape and extended the length to 2.20 m. At the same occation, the handle – height was raised 10 cm and carrying bows were attached to make carrying of the sled easier.

1990: One-man Akja

I had a long discussion with the head of the ski patrol Lech, Herbert Tschuggnall after a demonstration of the new Akja 2200 plus, the idea for an Akja that can be handled by only one patroller emerged. Also, a new, flatter shape should improve the accommodation of an injured in a vacuum mattress. This shape also improved the running stability. The new Akja became more widely distributed and led finally to my first cooperation with Bergwacht Bayern, which successfully continues until today.:



1991: Akja „Bayern“

Result of a close cooperation with my highly esteemed tutor and later good friend, a few years ago deceased Bene Götzfried. The new sled combined the running characteristics of the One-man Akja with the possibility to use it with a second patroller in difficult terrain. This Akja is built until today and utilized all over the world.

1992 Start of the textile production at TYROMONT.

Even though the owners of Tyromont were not fully convinced, they let me proceed and build up a small sewing section in the house. Before, all Tyromont textile products were made in a small saddlery nearby. The goal of the in-house production was to be more flexible and faster in development. Also, more modern materials should be used than in the saddlery. However, it was against the spirit of the time, as most textile productions went to the now open eastern Europe, where labour costs were much lower. But this was no real option as development would have become even more difficult. This in-house „production“ allowed my first development in the field of helicopter-rescue bags:

1992 Aerial rescue bag REGA type Jungfrau



Named after one of the most known and beautiful mountains of Switzerland, this entirely new helicopter rescue bag was developed together and with great support by my good friends Hans Giacomet and Luciano Gähwiler. I was the first heli bag with 10 – point suspension, which brought a great improvement in comfort for the patient as well as its flying quality. In its general outline, it is the basis for all of today's Tyromont helicopter rescue bags. Thanks Lucio and Hans! Every Helicopter of REGA was equipped with this bag, and many more worldwide.

Now it was again time for something „back to earth“

The quick development of semi – static ropes at this time opened up new possibilities in terrestrial alpine rescueing. Since quite a time it was known that the steel – cables, which were then commonly used had a significantly too low safety margin. Only because of the experience of the rescuers and sometimes simply luck there were no larger accidents. The semi – static ropes offered a much higher breaking strength, at the same time they had some disadvantages in rock – falls, higher friction on the ground, etc.. The biggest disadvantage, however, was that there were no winches available to move them. The young and enormously committed team of instructors at the mountain rescue Vorarlberg around Pablo Barbisch (today IKAR President of the terrestrial commission), Rainer Märk, Rainer Schuchter und Leander Bitschnau wanted to change this. So a wonderful cooperation emerged:

1993 Hyperbol – Abseilgerät:

Allowed the simultaneous lowering of two ropes on one device. Thus, especially the danger of damage through rock – fall was significantly reduced. Therefore, this device replaced the steel – cable brake block and paved the way for a wider use of semi – static ropes.

But the most important element was still missing: A winch to lift- or lower rescuers and victims, same as the steel – cable winch did in the past decades. Here we were on uncharted territory. My experiences as a hobby sailor since childhood helped, so we started experimenting with sail – winches. This led to the cooperation with the worldwide most reknown manufacturer of sailing equipment, HARKEN. Especially the HARKEN representation in Germany, Peter Frisch GmbH, supported us from the beginning. This cooperation continues until today. After many tests and discussions, thanks to Pablo, Rainer, Rainer II, Leander, as well as Eddy Eich and Thomas Schnell at Peter Frisch – we presented the

1994 Fibre rope winch „Silvretta“

A great success! After some initial „religious wars“ steel – cable vs fibre force, it started its way into mountain

rescueing worldwide. Co – deciding for the success of the fibre rope winch Silvretta was the integrated rope -stop, which automatically stopped any movement as soon as the rescuer lost hold of the rope.

Within a few years, almost all mountain rescue organisations switched to fibre ropes, and a good portion of the also to the Silvretta – winch. It is still worldwide in use, besides mountain rescueing at many special purposes like armys, industrial uses and mountainous construction sites. It is still produced in its original layout.



After quite some time of building up trust (not the least because of the Silvretta winch) and sometimes friendship, a closer cooperation with Bergwacht Bavaria finally started. The equipment commission around president Willi Beeker, Baptist Kocher, Bene Götzfried and many other valuable friends decided to put the development of an entirely new mountain stretcher concept into my and thus Tyromont's hands. Lead by Manfred Steffl from Bergwacht Chiemgau, we developed the entirely new:

1995 Mountain stretcher SRS

(=Schutz Reling System)

This new mountainstretcher was revolutionary. For the first time it was possible to transport a 2m large victim in horizontal position on a vacuum matress, completely protected by a surrounding frame.

A wheel system with disc – brakes made the work of the rescuers easier. The SRS distributed way beyond Bergwacht Bayern and is today still in use at many rescue stations. Its basic shape can be found in all later Tyromont mountain stretchers until today.



1995, 1996

Relocation of TYROMONT to the new home in Innsbruck, Sillschlucht: The old location in the historic Lobkowitz – building in the ex – saline Hall became obsolete, because the floor under the heavy sheet-cutting machine had collapsed. It turned out that a channel of the middle-ages salt processing was underneath that could not withstand the forces of our production any more. All machinery had to be moved to the new plant as quickly as possible, set up and made fit for the new production. A heavy task in every sense due to our old and heavy machines. Office and storage moved temporarily to our sister company Köllensperger Eisenwaren at Thaur and followed later.

1996 My son and sunshine Egon was born. Thank god we became friends for life. Therefore, this text is on our mutual homepage. Egon completed a practicum at Tyromont during his Bachelor degree course.

1997 Helicopter rescue bag Aiut Alpin with internal belt system

The legendary Raphael Kostner, head of Aiut Alpin Val Gardena first had the idea to use a helicopter rescue bag for the fixation of a patient inside the cabin during flight by means of a belt system integrated in the rescue bag.

Together with Karl Höfler, an experienced technician at the helicopter manufacturer MBB (today Airbus Helicopters), this belting system was designed and integrated into a helicopter bag with 10 – point suspension. Today, it shows how revolutionary this idea was, as a belting inside a rescue bag is used now by a number of rescue organisations worldwide.

1998 Helibag Christophorus,

ÖAMTC Christophorus Flugrettung, our first customer and development partner for helicopter rescue bags decided to renew their large fleet of rescue bags. Joe Redolfi, their then head of alpine instruction, had quite a number of requirements and ideas. Therefore, a very versatile, flight-stable and easy to use new helibag was developed. It turned out to be so good that the Helicopter rescue bag

CHRISTOPHORUS is the basis of almost all Tyromont Helibags until today.



2000 Helibag Christophorus EVO

From the experiences with the new helibag Christophorus a number of ideas for improvements emerged (Joe Redolfi still did not have enough), so features like stabilizing struts under the neck – area, a stabilization of the head opening, protective padding at the sides and many more. Both Christophorus and –Evo laid the base for more than 30 derivate used today at numerous heli-rescue operators.

Together with the EVO bags, a new Vacuum mattress, designed specifically for the requirements of flight – rescueing should be developed. This led to:



2001 Cooperation with Kohlbrat & Bunz

With their new REDVAC vacuum mattresses, Kohlbrat & Bunz had the perfect base for what ÖAMTC and I wanted. However, until now K&B and we were in competition, as we sold the swiss Tellewa mattresses. Besides this, I had a good talking basis with the owners of K&B, Christine Dzionara and Hakan Rugfeld. At the IKAR congress Makarska 2001, Christine Dzionara made the first step and suggested to cooperate. It became late in a Croatian Konoba and we agreed a cooperation that continues successfully until today.

Now it was time to do something for winter again. The Canadier rescue sled (named after the famed wooden „Canadier“ rescue sleds of the Parsenn Ski Patrol in Switzerland) became increasingly popular, so I developed the

2002 Canadier with brake system

Once before, in the midst of the 1980's, a Canadier with brake system existed. Its system functioned by turning the handles and its braking was very effective. The mistake of this system was that upon contact with a hard object on the ground like a rock or a root, the brake claw often broke or the housing of the brake was damaged. Principally, a brake system is a useful supplement for a one man sled like a Canadier, so I started to work on a solution. With a brake system, activated by lifting and lowering of the handles and brake claws pivoting around the length - axis the problem was solved. As the brake claws are made from ice-axe claws, this rescue sled can be operated by one rescuer even at the most icy and hard slope conditions. In its basics, meanwhile much lighter and improved to the experiences made in operation, this system is still in use at the current Canadier with brake system.

2004 start 1-2-3 Pod

The then head of the mountain rescue Tirol, Peter Veider, had the



idea for a light, carryable system for leading the working ropes above the ground. This monopod should help reducing rope friction and the



danger of rock - fall on the ropes. With three of these monopods and a connection element, it was planned to form a tripod for crevasse -

rescueing. Of course, this required a number of detail solutions. For the struts, due to weight and strength requirements only carbon was really applicable. However, this material was entirely new to mountain rescueing, so this and the unfamiliar handling of the monopod led to controversial discussions.

The 3-Pod for crevasse rescue was quickly accepted, the monopod turned out to be too complicated for general use.

Therefore, we developed with one long and one standard „leg“ a bipod - system which was very easy and reliable in use. This Bipod should later in my life play a central role two times ...

2005 Fall at Nygardsbren



Peter Veider and I were invited by the red cross Norway / mountain rescue for a demonstration of the 3-pod crevasse rescue system at the Nygardsbren glacier. It rained heavily all day, the ice was bare, the clothes wet and the brain after a long day tired. I stepped into one of my trousers legs (which was too long as it was soaked) stumbled, distributed the tripod on my shoulder over the glacier and滑ed well 30 m over a 45 degree blank ice flank. I expected a heavy impact into the granite blocks at the lower end of the glacier and was prepared for everything, but a fortunate destiny placed a large granite plate so that just rolled over it to stop. I was full of

hematoma, but could continue the descend to the valley on my own feet. A norwegian birthday party with a good portion of Ringnes did the rest. Sometimes you just need luck!

2005 Trailer device for Akja

Schidoos became more and more common for the transport of injured on ski – sloped, especially at long connection slopes of large ski areas. However, only a sitting transport was possible. So I designed a device to tow the Akja in a safe way behind a snowmobile. To prevent the injured from being frozen by the snow spray behind the snowmobile, a folding protection cover followed shortly after.

2006, 2007

DI Rainer Daubeck (today Professor), then lecturer at FH polytechnic Wels, initiated a development project for a mountain rescue device for his Students. For this project a practical partner was sought, so our first cooperation with a scientific institute started. This laid the basis for the

2007 Mountain stretcher light.

lighter and more compact than the SRS, equipped with an entirely new handle adjustment mechanism, it continued the success of the previous mountain stretchers. The second generation of the light received a new roll – brake system, which was much easier in assembling and use. As the stretchers before, the mountain stretcher light became very popular, was and still is used at many rescue organisations worldwide. Beyond this, it is used at mountainous construction sites, at tunnel – building sites and several other purposes that I did not have in focus originally.



2007 Rescue trailer for Snow mobiles



At the IKAR 2007 at Pontresina, Artur Köb from mountain rescue Vorarlberg and I had a long evening, at which we developed the basic idea for a rescuetrailer for snowmobiles, specifically designed for the purposes of the rescue at ski areas.

Later, Artur's friend Harald Rehm, ski patrol chef at Schröcken / Arlberg joined us and helped with his practical experience.

After a short time the first prototype was built, tested and then founded a successful product line.

Later, version 2 came with a sliding mechanism for an external stretcher and / or Akja.

This trailer found wide distribution. One is currently currently

travelling to the North Pole aboard the research ship Polarstern in the MOSAIC – Project.

2008 Rescue bag REGA II

The reknowned swiss flight rescue operator REGA was the first aerial rescue organisation which decided the use of a rescue bag for the fixation of the patient at every mission. Also this fixation bag should be used as a winch bag. Especially for the use inside the cabin, REGA demanded a full certification of the bag with belting system according to the than valid FAR/JAR CS27/29. Bejond this, the function as winch bag should be certified according to the then available legal bases. (EASA CM-CS 005 did not exist then). Therefore we stepped on uncharted territory. As partner and advisor for this certification (and all that followed), we started to dcooperate with Enrico Ragoni and his company Airwork, one of the most experienced specialists for these issues in the helicoper field. The REGA also wanted ot cooperate with Enrico, as he cooperated with REGA already at other projects.



So we worked paralled at the design of a new rescuebag, the integration of the belts and connection to the stretcher, following the very specific requirements of REGA, and, especially Enrico, at the certification.

The requirements to be fullfilled were complex, the mountain of paper grew and grew, but finally we had on

23.12.2009 first type certifiction for a helicopter rescue bag

2009 first twin rope winch

Following an idea of Herbert Streibel of Bergwacht Bayern (who will occur a few more times in the following), I constructed a prototype of a twin winch by mirroring two HARKEN winches on a mutual carrier. For the mirroring, one of the winches had to run the wrong way round, which cause considerable problems.

However, Herbert presented this winch at a demonstration at the IKAR in Chamonix with good success.



But not the development of rescue devices is not everything in life, therefore:

2009 *Waltraud and I got married. We know each other since we were 16 and were a pair already for 18 years before we married. After Waltraud had a bad injury in skiing, we decided it was time to marry. I think you can call this a love for a lifetime.*

2010

Fall from a loading ramp at the Tyromont factory. Does not sound dramatic, but had quite serious consequences: My elbow was fractured into a number of pieces, most of the ligaments for the stering of the hand were torn off together with the pieces and the medial – nerv damaged. The further function of the lower arm was in question. To my great luck, Dr. Arora (now professor) consented to help me and did a geat surgery to repair what could be repaired. With a lot If metal pieces and after well a year of rehab, my left arm functions quite well again.

2010 New goals with Bergwacht Bayern

After returning to work, I asked what the most urgent task were. I learned that a man named Paul Schenk had called a few times and wanted a call back. I did not recognize the name at that time, called back, learned that he was the new man in charge for euipment and we discussed a few issued which turned out to be to complex to be solved over the phone. So I drove to Bad Tölz (more or less one-handed) and met Paul Schenk. It was the beginning of a wonderful friendship that continues until today.

The visits in Bad Tölz became regular, there was a lot to be done. Paul Schenk and Herbert Streibel, the chief instructor, had many new ideas and requirements. At one of these meetings, Herbert Streibel told me that The Bergwacht wanted to replace their old rescue bags and that he had a number of ideas for the new bag. Some of these ideas had already been realized at some other of our bags, so next time I travelled with a hawker's tray of samples and a notepad to Bad Tölz.

Within only one day (!!!), we had the basic layout for a revolutionary new rescue bag, the

2010 Rescue- and Winchbag Mod. Bayern



the new concept was that this bag should be useable as protection bag for the injured in an Akja or Mountain stretcher as well as a winchbag for heli – rescue. Therefore, there was a version as protection bag, to which a suspension could be attached with carabiners and a aerial rescue version with fixed suspension. It became an internal belting with external attachment points for the fixation in the cabin, an internal air-duct to use the Vacuummatress when the bag is closed and many more new features.

The first prototypes
were made and tested

delivery started in 2011. Beyond the Bergwacht Bayern and in other states, more and more users came, like Federal Police and Bundeswehr (Army) Germany, ADAC, DRF and many others worldwide.

But it would not be Herbert Streibel, if he didn't have a heap of further ideas for improvements:



Herbert's first proposal for a further perfection of the system was a protection cover for the head of the injured, especially for terrestrial missions.

Next, leg – slings should be added to the belting so the bag could also be used vertically. Was not so easy to find a good hanging position, but Herbert did not give up and out came a fantastic system that could be used very widely.

The leg slings should play an important role later ...



2012 Rescue triangle TYRAH



In the fall of 2011, Enrico Ragoni came with a new challenge to Innsbruck: REGA had estimated that at a great portion of their winch – missions it was not necessary to transport the victim horizontally. But a conventional rescue triangle was not regarded sufficient by REGA due to the lack of comfort and the known problems with the lower body. Therefore, they assigned Enrico to find a solution, and he came to me. As an approach to a solution the old Gramminger rescue seat came in my mind, at which the weight of the injured is supported by cloths around the upper leg. We built a prototype the same day, and at the end of the day Enrico drove to Switzerland with a new product. REGA tested it thoroughly, and after astonishingly few requirements for changes TYRAH came on the market.

2012 Start cooperation with Northwall Italia

At the ILA Berlin 2012 I saw something that scared me deeply as I thought this was the long feared successor over the vacuum matress. A small Italian Company at a small booth presented something that could be easily inflated and formed so a very rigid board on which a patient could be carried perfectly horizontal.

To my delight, one of the guys from this booth, Gian-Luca Martini, came shortly after this to our booth and asked if we were interested in a cooperation.

During the show, we already formed the concept of a heli bag for the Pneuspine, as this thing was called.



Gian-Luca and his Partner Nicola Martini visited us in Innsbruck frequently in the following time, and ideas flew back and forth.

At one of these visits, we tried systems how we could move the bag with the Pneuspine from horizontal to vertical and back in the air.

I told Herbert Streibel about these tests, but he did not seem overly interested.

A few times later a call from Herbert came: „Don't you have some stuff to move a Helibag horizontal / vertical“ yes, I said, some prototypes. „Then come to Bad Tölz with this stuff tomorrow morning, I have 30 people from Northern Germany that want something like this from me.“

It turned out these were rescuers from different organizations who should find methods for rescuing persons from wind power plants, especially off-shore where mostly helicopters are used.

And we had exactly what they were looking for! The prototype left directly from this training to Northern Germany. For me this was the entry into an entirely new world, the

From 2012: Rescue from Wind Power Plants

The Rescue bag, combined with the Pneuspine and the horizontal – vertical system was a solution to lift victims in a tower of a wind power plant, through the man-holes and the very narrow generator housing. Finally, it could be directly winched by helicopter, all in one device. Of course, this was a solution mainly for off-shore plants.

The first operator who utilized this system was DRF at Husum, after Nicola and I did a demonstration at the north sea cost in December in icy cold.

However, at this time I did not have much knowledge of the requirements in wind power plants, as until now I had mostly dealt with mountain- and aerial rescueing. But the windpower people were extremely helpful and I tried to learn as much as possible in as little time as possible.



On the other hand, I could bring in some approaches from alpine rescueing, so a very intensive development phase followed.

The next customers i was lucky to cooperate with were Havariekommando Bremerhaven, ADAC Sande and finally NHC Helicopters at Emden. Every cooperation was a new learning phase at the same time for me, the issue was and is exiting.



In the spring of 2015 I drove to Cuxhaven to do a training on the recently delivered bag/Pneuspine system on their training campus there. So I thought.

During the training it turned out that there was a good portion of improvement requirements to make the system really useful for this customer.

One of the participants made strikingly many suggestions and had an impressive knowledge in this field. At lunch, we sat together, it turned out that he was not only participant but the head instructor, Sascha Linges.

While we ate our Schnitzel, Sascha and I started drawing the layout of a new concept on a paper tissue, the base for a very productive cooperation and wonderful friendship was laid.

But now again up in the air.

2014 RBS

Rotation is a problem for everything that hangs on a rope under a helicopter. Especially for injured persons carried horizontally in a rescue bag this can cause serious problems. Additionally, especially at helicopters with a winch, considerable damage at the Helicopter can be caused by the movement of the winch – cable.

The most widely used system to prevent rotation is the so called tag-line. However, this system has considerable disadvantages as one person has to operate it from the ground, enough space to the side is required to be effective, and most of all, every year some serious injuries or worse happen to the users.

Also, there were some attempts to tackle this problem aerodynamically, but they mostly were not reliable enough.

Herbert Streibel decided with his imminent persistence to solve this problem together with me. I built a number of different sails, wind deflectors and moveable venturi nozzles, but neither of them really worked. The Federal police helicopter squad in Oberschleißheim near Munich supported us generously with plenty of flying time (as they wanted a replacement of the tag-line themselves), so it was a shame that we did not deliver results.

One day, we sat quite downcast at lunch which they also provided, when Herbert reported that he felt that it somehow had an effect on the movement of the bag when he lifted the fabric at the foot end. I was sceptical, it sounded too easy. However, we improvised a larger moveable area with the help of some cardboard, now the pilot was sceptical, but finally we gave it a try. There was clearly an effect to be noticed right from the beginning. I immediately drove home and made some prototypes. At the next testing occasion Herbert literally danced in the air under the helicopter. He could change the turning direction whenever he wanted or hold the bag perfectly stable. RBS (rotation brake system) was born. Today, a good portion of rescue bags worldwide are equipped with this system.



A propos worldwide:

2014 Start cooperation CASCADE RESCUE USA

Dana Jordan, owner of Cascade Rescue USA and I met for the first time at the IKAR conference 2013 in Bol (Kroatien). We had a long dinner together and came to the conclusion that we could cooperate in the future, even though we had partly products for the same purposes. Later Dana and his lovely wife visited us in Innsbruck and we laid the foundation for a very friendly cooperation.

2015 I travelled to the home of Cascade in Sandpoint/Idaho, and we started to develop common products. From this meeting, the Stable-Flight line of Helibags of Cascade and a prototype of a mountain stretcher from titanium emerged.

Back to good old Europe: Sascha Linges has meanwhile changed to Mittelmann, a very tradition-rich yet innovative company for rescue equipment. Mittelmann just brought its brandnew Unidrive lifting and lowering device on the market.

Unidrive and our new product line for confined spaces (developed together with Sascha and Michael Seifert, who later joined the team) worked fine together and formed effective rescue systems for special purposes. The cooperation with Mittelmann really started to gain speed, until:

26.8.2016: a short peek to the other side, Birthday.

In June of 2018, at a training of the rescue station Stubaital a strut of a bipod collapsed. With great luck nobody was harmed, but the cause of the breakage was completely unclear.

To determine the reason as exact as possible, we (some members of the rescue station, some members of the direction of mountain rescue Tirol and I) ascended to the site of the accident on "Kleiner Burgstall" and set up a similar Bipod to simulate the whole course of events. We worked calm and concentrated and then descended in



beginning rain back to the cars 150 m lower. Quite shortly before the cars I helped one of the guys to attach the bipod better at his backbag, then we continued our decent with me trailing slightly behind because I took my rainjacket out of my backbag. Descending further, I suddenly lost all power in my legs, my visual field dislimned and finally turned black. My heart has stopped to beat – sudden cardiac arrest.

It all went so fast that I did not feel the following head-first impact anymore – I was on the way to the other side.

But I rolled directly to the feet of my lifesavers.

Florian Schöpf and Florian Rettenbacher, two members of the station vorderes Stubaital and perfectly trained Paramedics, started immediately with cardiopulmonary resuscitation. After 2min45 CPR the face of Florian Schöpf appeared in front of me like through a fog. I was back in life. I said to Florian: "oh, I think I tumbled", and Florian told me later that he thought a ghost was speaking because I immediately talked.

Jochen Tiefengraber flew me with Christophorus 1 short time later to Uniklinik Innsbruck. After some examinations an inherent adhesion of the Aortic valve was found as reason for what had happened. In all the sports-medical tests and all other examinations later this was never found because my heart perfectly coped with it until this day. After about two weeks I received an artificial Aortic valve in an 8 h surgery and since then live a second life. I enjoy every day, also in bad time – you will see later why I say this.



Luck is a much too trivial word for what happened. I do not know why I rolled directly in front of my guardian angels, but I will always be thankful.

After four months of rehab I was back. Simply because I liked my work and missed the many friends among our customers and partners.

Especially, the focus was back to wind energy and rescue from confined spaces. A good portion in that had the cooperation with Sascha Linges and Michael Seifert, who now joined the team of Mittelmann.

2016 TYROLL



Sascha looked for a low – cost possibility to make the Rescue bag stiff enough for the horizontal – vertical system. So the idea came up to integrate the good old roll – stretcher idea into a rescue bag. Sounds easy, but brought some difficulties in the realisation. On the other hand, the self – stability of the rescue bag brought some advantage to the system as it prevented the common turning of such stretchers. Sascha came to Thaur, we completed the whole thing and a new rescue tool was born.

Today, the TYROLL is used for the rescue in wind power plants, in tunnel building and even for the rescue of persons from secluded islands.



2017 TYROLL CS und Derivate

Based on the experiences with the TYROLL, we continued to work on this system and created some half – stretchers for the rescue from even more confined spaces. In some of them, the TYRAH is integrated so they can be used from confined space to helicopter

Back to my roots, followed now an intensive development phase, a lot of idea finding and throwing away, and finally a great milestone and immediate success:

Development of a new mountain stretcher from light-metal

All previous Tyromont mountain stretchers were made from thin-wall steel tubing. They are exposed to high and uncalculable forces and very rough impacts when they are dragged over rock and other hard surfaces. Aluminum, especially weldable alloys did not seem to be resistant enough to withstand this. On the other hand they are made in relative small numbers so they had to be built at reasonable costs so that the cost/benefit relation for the buyers was reasonable. Therefore, carrying more weight was the “price” for an affordable price.

But in the recent years, in some stations Titanium stretchers were bought despite their price and the fact they were not designed as mountain stretchers. The way seemed paved. The first attempt was a Titanium prototyp made together with Cascade, but the final price would still have been much too high.

Additionally, it was considerably less resistant than the steel versions. A new high-strength Aluminum alloy and the will of a new employee at Tyromont finally triggered the project to build our first mountain stretcher in light metal.

Among our customers, it was of course Herbert Streibel at Bergwacht Bayern and, with great commitment, Franz Haller with the mountain rescue South Tirol who supported the project, and brought in a lot in development and testing.



After a lot of difficulties – especially the welding and the will to do it were finally much more troublesome than expected), the first prototypes emerged. After a year of testing it was ready for the market:

2018 Mountain stretcher TYRAL

*"ich sage oft, wenn mir etwas nicht gefällt, aber das hier gefällt mir ausgezeichnet!" Bruno Jelk auf der IKAR 2018 Chamonix
["I often speak up if I do not like something, but this here I like a lot"]*



Everything new at this mountain stretcher: It weighs half the lightest stretcher before. The new handle adjustment mechanism is lighter yet 70 % stronger than the previous one. The entirely new separation mechanism (to divide it in two halves for carrying) is extremely light and simple yet safe against malfunction due to dirt or impacts, a new belt system to use the stretcher horizontally or vertically, a possibility to fixate a rescue bag and a lot more new features. Additionally, I designed an entirely new wheel strut for this stretcher, much easier to attach and way stronger than the previous ones.

Not only Bruno Jelk, but also every rescue station and expert who tested it in the meantime says that this is the best mountain stretcher they ever tried.



I was really with the outcome and thought that this was a big step into the future for Tyromont.

The first series that finally came on the market in 2019 was immediately sold out ...

Additionally to this stretcher, Bergrettung Südtirol invited me into a project to make the rescue bag used in it also suitable for the fixation inside a car according to road traffic licensing regulations.

But for the moment I went on summer vacation.

Two days after my return came, without any warning and without misconduct from my side

21.8.2019 Dismissal through Tyromont, because I disturbed the work climate.

Over, end. For me, a world has collapsed, but not my life.