EVEREST IN A flash

As a new style of rapid ascent or 'flash' expedition that shortens the time needed to summit Everest gains popularity, one of its chief proponents Lukas Furtenbach explains how it compromises neither safety or ethics…

WORDS & PICTURES: LUKAS FURTENBACH

Summiting Everest just three weeks after leaving home

Snake oil!" – "It will never work for clients!" – "A highly dubious and dangerous undertaking!" – "Complete bloody hogwash!" These were just some of the many comments made about my company's (Furtenbach Adventures) 2018 Flash Everest expedition by luminaries of the mountain world and some of the pioneers of high altitude expedition climbing (a Google search will reveal more about who said what). And that was before the expedition had even begun! In this article I will explain exactly how we run our Everest Flash expeditions, and why I believe they are actually safer than standard, longer Everest expeditions and debunk the argument that they go against the ethics of mountaineering.

HISTORY LESSON

But let's start by going back 40 years. When Peter Habeler and Reinhold Messner, as members of the 1978 Austrian Alpine Association Everest expedition under Wolfgang Nairz, announced they would attempt an ascent without supplemental oxygen, they were told they would suffer permanent brain damage. Pretty much everyone who was anyone in the climbing scene at the time declared they were on a suicide mission. And this, despite the fact that Edward Norton had already made it to 8,573m on the North Face of Everest back in 1924, without oxygen.

Yet Messner and Habeler went on to make mountaineering history. Ascending the regular route on the South side of the mountain, they climbed their way to the summit along a route that had been equipped by 22 Sherpas with aluminium ladders and thousands of metres of fixed line, as well as five established high camps complete with stashes of oxygen cylinders. There was nothing new about the feat, insofar as by 1978 countless expeditions had already successfully climbed that same route.

What was really groundbreaking, was the fact that Messner and Habeler did not use any of the oxygen that had been deposited by the Sherpas on the mountain. And by doing so, they established a very exclusive club. By 2017, Mount Everest had been climbed a total of 8,306 times (including multiple ascents by the same person), of which 208 ascents were without oxygen, and only 151 of these without the help of Sherpas. By the end of 2017, the number of people who died on Everest stood at 288. Of this number, 168 did not use any supplemental oxygen.

These figures illustrate two things: that climbing Mount Everest without supplemental oxygen is seldom successful, and that it carries a high risk. For commercial Everest operators it is practically a moral obligation to enable their guests, Sherpas and mountain guides to climb with supplemental oxygen. I believe that limiting the amount of oxygen provided to three cylinders for example, or a certain flow rate, is actually tantamount to negligence, in much the same way as if a mountain guide were to say to his or her clients: "I'll catch you on the rope the first two times you fall but if you fall again, you'll have to climb on without a rope and take responsibility for yourselves". Whether someone has climbed Everest using just one bottle of oxygen at a flow rate of 2 litres/minute or five bottles of oxygen at a flow rate of 6 litres/minute is wholly irrelevant to both the official statistics or questions of moral or ethical style. The ascent was made using supplemental oxygen and will be considered and recorded as such.

There is no documentation to determine how many clients have died on Everest due to insufficient or inadequate oxygen supplies. But every single one of them could have been avoided. They were reliant on their expedition operator, the Sherpas or their mountain guide. And that is the reason they died.

FAST FORWARD...

It's the end of April 2018. The Everest season is in full swing. Our guests on the Classic Everest Expedition have been in Tibet for almost one month now and have just completed their first acclimatisation rotation on the mountain. The guests on my Everest Flash Expedition and I are still at home. It feels strange. In some ways, like being back at school and knowing you are going to arrive late, but there's nothing you can do about it.

Everest Flash means climbing Mount Everest in an outrageous four weeks for a progressive €95.000. Or is it the other way around? "Everest Classic" is a little more conservatively-priced at €55,000 for an eight-week expedition experience. For our Flash Expedition, team members take part in a special eight-week acclimatisation programme back at home involving hypoxic tents and active hypoxic training (see boxout on page 43). We have spent the last 15 years adapting the equipment we use to our specific requirements and fine-tuning the programme.

At the end of the eight weeks, each participant will have spent a fixed number of hours at different altitudes and reached a maximum sleeping altitude of over 7,100m. In this way, we are able to simulate two full rotations on the mountain. In theory, at this stage, they are ready to travel to Everest and set off straight away.

So that's exactly what we did. We left Europe on May 1st, spent two days in Kathmandu (1,350m) waiting for our visas and by May 6th were at Everest Base Camp on the Chinese North side, at 5,200m.

High up on Everest's north-east ridge

Looking down upper part of the Second Step

Having been exposed to altitude upon arrival in Tibet (Lhasa is 3600m above sea level), on the seventh day we then set off on our safety rotation and reached the North Col at 7000m without any difficulties (and without supplemental oxygen). Had our acclimatisation programme back at home not been effective, any altitude complications would have emerged by this stage at the very latest. So, we descended to Base Camp and waited for a suitable weather window, during which time all the clients on the Classic Team under the guidance of Rupert Hauer, successfully reached the summit on May 16th.

We were lucky with the weather and were able to set off on schedule. All of the clients in the Flash Team (once again under the guidance of Rupert Hauer) summitted on May 21st, just 17 days after leaving Kathmandu or 21 days after saying goodbye to their loved ones back at home. They descended to ABC (Advanced Base Camp) at 6400m the very same day. One day later, everyone was back at Base Camp, healthy and without any injuries or wounds, looking more like they had just come from the office than from a summit push on Mount Everest. No sunburnt faces, not even any cracked lips. Nothing. Their exposure time was too short for the mountain and the inhospitable environment to make its mark on them.

> "To make it clear once and for all – acclimatisation using a hypoxic tent back in your home country does work and yes, it works just as well as acclimatisation on the mountain at actual altitude, if not better."

LET'S TALK ABOUT OXYGEN

So, what now? In anticipation of further scepticism, and to make it clear once and for all, even for those who still don't want to believe it: yes, acclimatisation using a hypoxic tent back in your home country does work (it is also scientifically proven) and yes, it works just as well as acclimatisation on the mountain at actual altitude, if not better. And no, the Flash Expedition's success cannot be attributed to using ridiculous amounts of oxygen. But more on that later.

The Everest Flash programme and the €95,000 do in fact equate to a high level of support and safety on the mountain. We use a ratio of two Sherpas per client, offer an unlimited supply of oxygen and have had our own regulators built that produce a flow rate of 8 litres per minute. In addition, we carry spares of everything – masks, regulators and bottles – for each client, all the way up to the summit and back. The average summit day flow rate for Western operators on Everest stands at 4-6 litres per minute (see boxout, page 44).

Initial reactions to our Flash Expedition came in fast and were dreadfully misinformed. Supposedly we had allowed the team, which included pretty much anyone who asked regardless of experience, to be dragged up the mountain, each person short-roped to two Sherpas, and so pumped up with oxygen that they experienced an oxygen 'high' on the summit and danced

Camp 2 with a view to the North Col and Changste

> "We expect a great deal from our participants, but in all of our Everest expeditions there has only been one person with previous experience of an 8000m peak. And yet there has only been one client who didn't make it to the summit."

a victory dance like Neymar after scoring a goal.

Well, that would have been a simple interpretation for the critics and sceptics – were it the case. But it wasn't. The number of people we refuse on our Everest Expeditions is far greater than the number we accept. Our eligibility criteria are very strict and also differ from other operators. We expect a great deal from our participants, but in all of our Everest expeditions there has only been one person with previous experience of an 8000m peak. And yet there has only been one client who didn't make it to the summit (he was a surgeon and concerned about getting frostbite on his fingers).

It is the Sherpas that are primarily in charge of the transportation of oxygen bottles. One Sherpa always stays close to their designated client (but would never pull them), and the second Sherpa carries the oxygen. For the members of the Flash Expedition, the flow rate varied between 2 and 6 litres per minute. Being able to achieve a flow rate of 8 l/min, in our view, is about being able to avoid any bottlenecks at critical points. Breathing at 8 l/min you can climb the ladders on the Second Step at 8,610m faster, safer and more effectively than at 2 litres, which therefore helps prevent queues.

One team member on this year's Flash Expedition only started using oxygen at 8,300m. The total amount of oxygen used by the Flash team was the same as the oxygen used by the Classic team. The Flash team was one hour faster on summit day, in the same conditions, than the Classic team, which we can attribute to their being better rested. The Flash team members were all experienced mountaineers, but none of them were professional athletes.

Aside from the usual critique by the old guard, who changed their tune to "none of this is new anyway", reactions to the expedition where wholly positive. Scepticism was no longer an option,

Higher oxygen flow rates can prevent bottle-necks at places such as the Second Step

once the evidence was there. It has generated great international interest, especially in high altitude medicine circles, so there may even be a scientific study carried out alongside the 2019 Everest Flash Expedition.

A MATTER OF ETHICS

You can take whatever position you like on the matter. Whether it is more or less akin to mountaineering than the 1978 Austrian Alpine Association expedition where, aside from Messner and Habaler, all participants used oxygen to make it to the summit, is up to the individual to decide.

The fact is, commercial high-altitude mountaineering is changing (hypoxic training is already an established practice for professional high-altitude mountaineers). I believe that this counts as the first significant innovation in classical expedition mountaineering in 40 years, and that in the next 5-10 years, nobody will be spending two months on an 8000m mountain.

But what is it that makes people want to embark on such an expedition? Who is prepared to pay €95,000 to stand on the roof of the world and why? What makes someone set themselves a mountaineering challenge, go through the rigorous preparations beforehand and put their family through the worry? They train hard ahead of it and then, on the mountain, they give it their all, go through all the suffering and take on such a risk – but why?

> "In that moment, I realised what it was all about. It's about our ego. In both of the situations. Yes, that's right. For both the client on a commercial Everest expedition, as well as the professional mountaineer."

This question, of course, has been pondered at length by all sorts of people. As a service provider, I try first and foremost to understand my customers. What draws them to the mountains? For a long time, I thought it was the simple need to set themselves a challenge, or even about finding themselves. But then, I witnessed something on Everest and it changed everything for me. During a filming expedition, I was standing on the summit ridge with my filming partner, the gifted cameraman Philipp Flaemig, who was filming at the time. In the frame, over a period of several minutes, there was a woman climbing up the Hillary Step (even though it supposedly doesn't exist anymore, there was no doubt it was the Hillary Step). On all fours, the woman took 15 minutes to climb the 10m-high section. We were captivated by the situation. It was almost unbearable. She was at her very limit, having to give it her all and she was prepared to do so, too. Her determination, her sheer will, and the slowness with which she moved, on the verge of total exhaustion, reminded me of the images that I'd seen of Messner and Habeler, as they "crawled to the summit on their hands and knees" (as Messner once put it himself) and which have been etched into my brain as a symbol of determination and the human capacity for suffering.

In that moment, it was clear to me that the people concerned, and the two situations were actually not that dissimilar. They even happened in the same location, maybe even the exact same place. Their hands and knees both touched the same rock. Did they share the same drive, the same motivation? It's a strange thought but one that I would like to propose.

In that moment, I realised what it was

Approaching the summit in first morning light, ABC on the moraine far down below

all about. It's about our ego. In both of the situations. Yes, that's right. For both the client on a commercial Everest expedition, as well as the professional mountaineer. Each person acts in accordance with their expectations and opportunities. So, the Chief Executive responsible for 40,000 employees, somehow fitting family in around their 100-hour work week, has different preconditions when embarking on a climb than the full-time professional mountaineer, being paid for their time on the mountain, more often than not with no family at home, and naturally with more time for training, planning and also carrying out an expedition.

That is why the executive will (hopefully) opt for a commercial operator, support and oxygen along the regular route up Everest. Because it is the right option for them. They will also not complain about the fixed lines, Sherpa support, oxygen, the amenities at base camp and about all the other people on the mountain.

The professional mountaineer on the other hand, will (hopefully) stay as far away as possible from the regular routes. Ideally, they will be on the East side of the mountain, attempting the Kangshung Face or the East (Fantasy) Ridge - without using Sherpa support, fixed lines, oxygen or the sauna at Base Camp, or even the commercial operators' rescue resources. All alone. Or as Albert Frederick Mummery coined the phrase in the late 19th century (and was later adopted by Reinhold Messner), "by fair means", because that is where and how a professional mountaineer should operate. It would immediately bring an end to all the complaints of too much infrastructure on Everest.

However, in recent years, one has only seen professional mountaineers on the two regular routes, and therefore within the commercial infrastructure and rescue area. It has been a long time since any pioneering attempts on the East side of the mountain or the Fantasy Ridge were undertaken.

The price tag of €95,000 for a Flash Expedition is reminiscent of the golden era of Everest Expeditions but is soon put into perspective when you take into account the logistical implications of unlimited

TRAINING AT ALTITUDE

Acclimatisation using hypoxic tents means exposing the body to normobaric hypoxia and thereby initiating the process of acclimatisation. A filter extracts oxygen from the ambient air and then blows it into a tent. The filter can be regulated, simulating oxygen levels at a particular altitude. In contrast to hypobaric hypoxia, the air pressure within the tent remains the same.

Studies show that air pressure only plays a minor role, if at all, in the acclimatisation process. Regular systems can simulate altitudes from 4500–5000m (depending on the altitude at which it is situated). With specialist systems and using particular procedures, an altitude of up to 8000m can be simulated in your home.

Depending on your particular goal or aim, you can sleep with one of these tents erected over your bed for a certain number of weeks, gradually increasing the simulated altitude in accordance with your programme. Similar to a 'real' altitude situation, symptoms associated with acclimatisation such as disturbed sleep, headaches or Cheyne-Stokes breathing, can also occur in the tent. And just like at real altitude, these symptoms differ from one person to the next. For the best results i.e. full preparation for very high altitudes, special instruments measure the oxygen content in the tent, the person's pulse, oxygen saturation levels and breathing rate at all times.

A distinction must be made between the

use of hypoxic tents from a training point of view, as has long been established in professional endurance sports, and the use for pure acclimatisation to prepare for moderate to high altitudes and shorten or completely do away with the time required for acclimatisation on the ground. For an Everest Flash Expedition therefore, the total time of altitude exposure is not, as is often cited, less than on a regular expedition, but quite the opposite, is actually more (eight weeks in a hypoxic tent and four weeks on the mountain). Based on the current thinking in altitude medicine, which claims that the risk of altitude-related physiological complications decreases when longer acclimatisation times are undertaken, then it follows that the level of risk on our Flash expedition is lower than on a regular expedition.

oxygen on Everest. A professional mountaineer's project will often cost several times this amount. The costs in both scenarios are outrageously high so let's not even begin to think about whether it is sensible or not. The level of commitment and willingness to take risks are much higher with the client of a commercial organiser than with the professional mountaineer. After all, they have to raise the money for the expedition themselves and deal with the loss in earnings during the time they are on the expedition. The professional mountaineer on the other hand, if they really are a professional, will hardly have to plough any of their own money into the expedition.

Those who pay €95,000 are quickly judged by others for "buying" their Everest summit. Here, I must take a stand. They take the whole matter very seriously, prepare meticulously for their challenge, are often very serious mountaineers with impressive mountaineering CVs and – particularly important to mention – they are always very professional in their approach and communicate their achievements accurately. It is very clear that oxygen, fixed lines and Sherpa support were used, and if the summit is not reached, there are no false claims of summitting on a guided expedition.

Many professionals could take a leaf out of their book in this respect. Distant history

> "Guests, paying between €1,300 and €1,700 for a guided tour on the Matterhorn, are allowed to leave ahead of the regular walkers – provided they've booked with a local mountain guide resident in the immediate area."

and the more recent past has shown us time and time again, and as we are soon to learn from the heroes of today, the audacity with which people cheat in professional mountaineering is disgusting. It is damaging to the image of the whole sport. Being accurate and, above all, honest in your disclosure of your achievements is important for the credibility of the entire community.

REALITY CHECK

Perhaps a little excursion to the Alps will put all the outrage and the data surrounding the 'commercialisation' of Everest into perspective. These days, in an average season, there are approximately 400 people who attempt to climb Everest. For the Matterhorn this figure is 150 per day and 3,000 per year. The Großglockner has to endure 5,000 climbers a year and Mont Blanc as many as 20,000 – 30,000 per year. The "Hörnli Hut Foundation" (for tax saving purposes it is a foundation) charges an impressive CHF 450 for an overnight stay in a double room with half board at the Hörnli Hut (sponsored by a Swiss watch manufacturer) after payment of a "reservation fee" of CHF 50 (which is "non-refundable" but will be deducted from your overnight stay). But then there is also the "Marschtee" (hiking tea).

Guests, paying between €1,300 and €1,700 for a guided tour on the Matterhorn, are allowed to leave ahead of the regular walkers – provided they've booked with a local mountain guide resident in the immediate area. Other climbers without a mountain guide are not allowed to leave the hut before them (when will this unfair system be debated?).

Whichever of these peaks, dreamt of by numerous mountaineers, you choose to be guided up, with a little luck, you will get a mountain guide who is fully up-to-date with their training and has a healthy approach to risk – and no longer has several people roped up at a time (for the Matterhorn the locals have long since adopted a strict 1:1 guide/client ratio). But there will still be bottlenecks. Whether it's on the Matterhorn, Mont Blanc or the Großglockner, one can easily bring to mind the latest images shared on social media showing queues of 25+ people, on one rope.

How quiet and peaceful it was on Everest. 200 people at Base Camp, spread over an area of four square kilometres (at the Hörnli Hut 170 have to share a space covering 300 square metres). Our Flash group were alone on the summit day on Everest. It was only on the actual summit that we met other mountaineers who had climbed up from the Nepalese side. And what a beautiful moment that was.

Whether it really is our ego or something else that drives us to climb mountains, we are not trying to find a cure to cancer. We go there for the fun and the great experiences and because we have a shared passion – whether it's us with our guests, the individual mountaineer or a professional alpinist. We are all in the same mountains. Let us focus on our own experiences and not on criticising others and how they choose to spend their time out in nature. Because all the rest is complete bloody hogwash!

For more info on Furtenbach's Everest Flash expeditions, go to www.furtenbachadventures.com

OXYGEN SYSTEMS

The majority of oxygen systems on Everest and other 8000m peaks currently originate from one of three companies. They all work in roughly the same way and all of them deliver a continuous flow of oxygen at a flow rate (litres of oxygen per minute) that, in modern systems, can be set.

A system that is triggered by an intake of breath (pulse dose), like those used in medicine, and that would substantially reduce the amount of oxygen used, is currently in development. But to date, it has not proven reliable enough in extremely cold temperatures.

A modern oxygen canister, when full, weighs around 3.8 kg and contains 1,200 litres of medical-grade oxygen, as long as it has been filled in a certified facility (there have been multiple deaths due to contaminated oxygen). At a flow rate of 2 litres per minute, a bottle like this could last for almost 10 hours of breathing.

The canisters are under enormous pressure (300 bar) and therefore present a potential hazard. The oxygen is released through a regulator and fills a reservoir attached to the mask, which helps keep wastage to a minimum.

The climber breathes in air from this reservoir and the air they breathe out passes through an outlet valve.

The crux in climbing with supplemental oxygen is striking the right balance between the size of the reservoir, the person's breathing rate and the flow rate of oxygen. In conjunction with the ambient partial pressure these factors then determine the maximum possible flow rate.

Lukas Furtenbach: 'snake oil salesman' or high altitude innovator?