

Maria Leijerstam's Polar Cycle

Last December, **Maria Leijerstam** became the first person to cycle to the South Pole. She spoke to Dan Joyce



British adventure cyclist Maria Leijerstam arrived at the South Pole on 27 December 2013, after a journey from the coast that took 10 days 14 hours and 56 minutes. No skier has done it in under 18 days. Roald Amundsen's journey – albeit from the *outer* edge of the sea ice – took him almost two months. So as well as holding the Guinness World Record for being the first person to cycle to the pole, Maria made the fastest human-powered journey to the pole by a huge margin. She revolutionised polar travel. She did it not on a fat bike, which you might expect, but a custom recumbent trike. Why?

'Two and a half years before I went to

Antarctica, I competed in the Black Ice Race in Siberia, cycling 650km along Lake Baikal,' Maria says. (She was the first woman to take part, finishing second overall.) 'I used a normal two-wheeled bike. In one day in Siberia, I came off more than 50 times. The bike was just blown from underneath me. I knew Antarctica's wind would be worse.

'I came up with the concept of some kind of recumbent for aerodynamics and three-wheeled stability. I had ideas for stabilisers on a normal bike, two front skis, all sorts of things. I also spoke to Antarctica experts in Iceland. They said that due to the compact snow conditions, wheels work very well; they drive trucks out there. I took a lot from them in terms of the types of tyres and pressures required. We went down and presented the idea to ICE. They bought into it very quickly!'

Crawler gears

The most obvious feature of the Polar Cycle that ICE designed and built is that it uses 26-inch fat bike wheels with tyres almost five inches wide. These provide traction on snow and, thanks to the studs in the rear tyre, ice.

"In Siberia, my bike was just blown from under me. I knew Antarctica's wind would be worse"

The rear wheel is tucked as far as possible under the rider to prevent it losing grip. Maria's equipment – 55kg of food, camping and survival gear – added more weight over the drive wheel.

The Polar Cycle has other less obvious features. 'It's got incredibly low gearing,' Maria says. 'Bottom gear is about half that of a normal mountain bike, because I had to climb from sea level to 3,000 metres over about 90km. It was a 25% gradient in parts – incredibly steep with 55kg on the back.

'It was geared about right. There were some sections where I used my hands on the front tyres to give it that extra little bit to get the pedals through the dead spot. Once I was up onto the polar plateau, the gradient was only half a percent or something – very gentle climbing. I think my fastest speed was about 13km/h.'

Training in the freezer

Maria came to cycling quite late in life. She took up adventure sports at university, where she was in the Officer Training Corps for the Territorial Army. She did triathlons, Ironmans, and ultra-marathons; in 2007, she competed in the Marathon des Sables, a 156-mile run across the Sahara Desert. But cycling was her strongest discipline.

'Then in 2010, I thought: "I wonder if it's possible to cycle to the South Pole?" I've always had a fascination with Antarctica.

Photos by The White Ice Cycle Expedition



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And I found out that nobody had done it before.' Four years later, she was setting off from the Ross Ice Shelf – the same side of Antarctica that Amundsen and Scott began their expeditions from.

Sorting out the trike, equipment, and logistics was only part of the preparation; Maria also trained very, very hard. 'I did cold-weather training in Siberia, Norway and Iceland. I cycled in an industrial freezer for a day. I pedalled a turbo in a small blacked-out room. And I spent hours and hours cycling.

'I did deprivation training as well – getting up early in the morning without any food or water and riding for three or four hours. Bodies are so resilient, particularly the female body. We have a very good endurance tolerance. It's to do with child birth and things like that.'

'Visualisation was really important too. Before I went out to Antarctica, I'd imagine things that could go really wrong, and how I would deal with those and get myself out of trouble and make myself continue.'

On her polar journey, Maria cycled for up to 17 hours a day, resting for only four or five hours a night. Her route and cycle choice were completely vindicated. Two other cyclists made attempts on the pole at the same time as Maria. 'One ended up pushing his bike the majority of the way; the other one skied almost the whole way, towing his bike,' she says. 'They took 50 or 55 days.'

Pole position

Maria's route took her from the Ross Ice Shelf, up through the Transantarctic mountain range. 'I chose to climb up the Leverett Glacier. Luckily the conditions were right: it had been very windy in the days beforehand, blowing away the snow, so it

“It wasn't really fitness out there that was key, more mental stamina and all the preparation”

was almost exposed ice. I'd put studs in my tyres, so I actually had very good traction going up there.'

While Maria was very comfortable on the Polar Cycle ('I could sit on it all day, no saddle sores, no discomfort'), the slog up to the 3,000 metre Antarctic plateau was gruelling. 'I suffered from altitude sickness. And I sustained a bad knee injury from the strain of cycling up the mountains. So I definitely slowed up a bit. But it wasn't really fitness out there that was the key, more mental stamina – plus the preparation that had gone into it all, the route I'd chosen, the equipment I'd taken, and everything like that.'

In the vast emptiness of the Antarctic, Maria saw the pole from about 15km away. 'Those 15km took me four or five hours. I'd experienced almost all the emotions before I got there. I'd done the crying, I'd done the "I've made it!". By the time I'd got there, it was a bit: "Now I'm here, now what?" I suppose because it had taken me four years to plan and organise and it was all over, I was upset as well. But I was absolutely delighted too!

'It was an incredible journey. The thing I remember most is the endless amount of nothingness that was out there. I couldn't see anything, couldn't hear anything, couldn't smell anything, didn't think about anything. It was a unique experience.' ●

You can find out more about Maria's trip on her website: whiteicecycle.com. There's a video of it there available for download too, at a cost of £5.

Tech spec: ICE Polar Cycle

FRAME: custom made from heat-treated 4130 chromoly **WHEELS:** Surly Big Fat Larry 26×4.7in front tyres, Surly Lou 26×4.8in spiked rear tyre, Surly Clown Shoe rims, Hope FatSno front hubs **TRANSMISSION:** Shimano 12-36 9-speed cassette with custom 2:1 mid-drive and Q-rings. **Three heavy-duty YBN chains. Bottom gear: 8.7in BRAKING:** Avid BB7 mechanical discs **STEERING & SEATING:** ICE Ergo-Flow mesh seat, standard ICE underseat steering. **EQUIPMENT:** custom made rear rack designed to hold 50kg+ of equipment. Tested with 100kg. **FURTHER INFORMATION:** For more details about Maria's trike, see the ICE website icetrikes.co/community/ice-blog/white-ice-cycle.

I WANT ONE! ICE have launched a production fat-tyred trike inspired by the Polar Cycle, the ICE Full Fat – see icetrikes.co for details.