"Living with a Rohloff Hub"

By Andy Blance
(Thorn's designer and test pilot).

SUMMER 2013 update

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INDEX

More than sixteen years have passed since Rohloff first introduced their revolutionary 14 speed geared hub.

I was interested in the hub at the time of its launch, but (like many others, I expect) I didn't want to buy something which I felt may not work properly and which I knew I wouldn't be able to mend. I could see the attraction of being able to change through all 14 gears using just one shifter; being able to do this...without even needing to pedal, was more attractive still!

I could see that maintenance *could* be much simpler and the wheel *could* be much stronger.

We were persuaded by some strong-willed customers into building a few custom bikes equipped with Speedhubs, and hearing much positive feedback from the happy owners, I decided to contact Rohloff myself in spring 2002...I reasoned that, with the passing of the years, Rohloff would have identified and cured any problems during this time.

"What problems have you had and what is the service life?" I asked, getting straight to the point, after introducing myself.

"No joke, Andy, but we have never had a hub fail, so we can't tell you the service life, but some of our customers have covered 70,000km of world travel" was the reply from the product manager, Carsten Geck. (Rohloff still claim never to have had a hub fail and the greatest distance claimed for a Rohloff hub in 2009 was 145,000km by Thomas Longin.)

Apparently Rohloff have now (July 2013) stripped hubs which have covered more than 200,000Km. They tell me that wear on critical components, in these hubs, showed that they were still nowhere near the end of their service life.

There followed more emails and my design for a Rohloff-specific frame was approved.

This is equipped with an eccentric bottom bracket to adjust chain tension, whilst using socketed vertical drop outs, which we know produce the most reliable rear ends for touring bikes.

Whenever we get the opportunity Fiona (my partner) and I like to travel on dirt roads, over high mountains, with medium-weight camping and cooking kit and up to 1 week's supply of food. I built two "Adventure Touring" bikes with Speedhubs and Fiona and I set out in Feb 2003 to ride as many mountain gravel roads as we could find in Tasmania... there were plenty!

The bikes were better than good - they were sublime - we liked the Rohloff hub so much, that these bikes were soon joined by lightweight, sporty bikes with Speedhubs.

2013 UPDATE: **The strength and durability of the bikes, which we took to Tasmania, has now evolved into the** Thorn Nomad. **The lighter weight bikes have evolved into the** Thorn Mercury.
The Thorn Raven **falls between these two machines. We also have our Rohloff tandem -** The Raven Twin.

PART 1 Andy's Blog?

Thorn Enduro 2004

Our Rohloff equipped MTBs

In September 2003 I rode the Newnham 90Km Enduro on our first prototype Rohloff mountain bike; this was a "hard tail" design, built from our medium weight, conical, Reynolds 853 tubeset.

I designed the frame specifically for hard use, low maintenance and long life. The results were very encouraging, a few tweaks were made and now the geometry is spot on... a quintessentially perfect blend of stability down hill and agility on single track! The "Enduro" is perfect for long distance, high performance cross-country riding, winter mtb training (or, in the case of the "Catalyst" version, also towing a Bob Yak trailer around the world!) With the help of a short travel suspension post, I can ride this bike all day…I have completed a 90 mile (150Km) mtb ride over challenging terrain.

Compared to the usual alloy framed, derailleur geared bikes, the overall impression, when riding off road, is actually one of silence! This is not the usual first impression of a Rohloff hub (!) and is primarily because the chain can't slap on the stays but even seventh gear does not sound too noisy off road.

It is the bikes' performance in mud which is their most outstanding feature... not only do all the gears continue to operate faultlessly, the 'muddy' transmission is much more efficient and much lighter in weight than muddy derailleurs. The bike is so easy to clean afterwards, that the ratio between ride time and cleaning time, improves dramatically, which certainly encourages winter use

Further Developments and Diary

Fiona and I had the opportunity to load the tourers up, with camping kit and head south to Australia again.

Jan-Feb 2004. South Western Australia's sandy trails and graveled forest tracks were no problem for the Rohloff. The bikes performed faultlessly and traveling with them was indeed "No worries".

In late 2004, the hubs were fitted to a pair of Thorn eXXp bikes (massive, carthorse-like, touring "mountainbikes") and during **Jan, Feb and Mar 2005** (the UK winter) Fiona and I headed north from the southernmost tip of Mainland Chile, into the most ferocious winds and over the roughest gravel roads imaginable. We met many cyclists with broken bikes but we had no mechanical trouble (or punctures!) ourselves. The bikes were absolutely superb... the only maintenance given to the transmission was to wipe the muck off the chain and apply lube from time to time... the Rohloff chain only needed to be adjusted once in 2000Km, which of course, was easily achieved in a few minutes using our foolproof eccentric BB system.

During the trip we named our bikes "Hector" and "Bertha". Fiona and I also have a pair of eXpR bikes, which I built in 2005…they are designed for big loads on better roads (Europe?). These bikes have had numerous long camping weekends and also get used for long Audax rides…for which they are obviously over-built…they have not had the same workout as Hector and Bertha but, in addition to having been 100% reliable, they are without doubt the best handling bikes I have ever ridden...with, or without, a load!

In late 2005, we added S&S couplings to Hector and Bertha and gave them a coat of flashy paint in readiness for the London bike show.

In Dec 2005 we launched the Rohloff-equipped, Raven Twin tandems. There are 11 different sizes, each of which is available in a choice of 3 different colours and each size/colour is also available with an option for S&S coupling. All of these options are available from stock. **Getting rid of the front mech is a phenomenal benefit on a tandem, as is being able to change gear without pedaling,** that these two reasons alone make Rohloff the preferred option for a working tandem, without even considering the benefits of easy maintenance and great reliability! Almost all the feedback we have had from the new owners, has been extremely positive…very few have been returned under our 100 day money back guarantee of satisfaction. Fiona and I have a Raven Twin tandem…ours is set up for Audax rides. I can honestly say that it is the best tandem that I have ever ridden.

Thorn Raven Adventure

Thorn Nomad S&S (Mk1)

During **Jan-Mar 2006**, Fi and I headed off, with Hector and Bertha to Argentina and Chile again. We traveled mainly on gravel roads, some of which were akin to stream beds and very hard going! We crossed and re-crossed the Andes 6 times, each crossing saw us literally reaching new heights, culminating with the 230Km climb from sea level to 4757m over the Paso Agua Negra. We hurtled down the most spectacular descent, the old route from Uspallata to Mendoza; this route, carved into the sides of the mountains, has (allegedly) 365 hairpin bends and multiple sheer, unfenced drops. I love fast descents and this is the most exciting and technical ripio descent that I've ever ridden…we touched 40 mph (64kph) at times, with full camping kit. The bikes were superb, needing no maintenance (apart from chain lube and adjusting chain tension once) and, unlike our hearts, the Rohloff hubs never missed a beat.
Fi and I both decided that trying to prevent a "show-stopping" paint finish from being damaged was more trouble than it was worth, therefore, during
summer 2006, we gave Hector and Bertha a double industrial powder coat of military olive green…which suits them perfectly.

In **Dec 2006**, using the knowledge and experience gained from our "big trips", we launched the Nomad S&S…this surely is the definitive, affordable adventure touring bike…obviously it is Rohloff equipped…it certainly could not be called "definitive" otherwise! I have had much praise heaped upon my head from numerous happy Nomad S&S customers.
Jan-Mar 2007 Fi and I loaded up Hector and Bertha again and headed for our third trip to Argentina and Chile. We messed around on the ripio in northern Argentine Patagonia for a while and then crossed, on the worst "roads" yet encountered, into Chile, where we took a 36 hour, 2,500Km bus trip up from Temuco to Calama, in the Atacama. Our plan was to cycle from the driest place on earth, over the Andes, at practically their highest and widest point, into Northern Argentina. We had to carry over 50kg each (much of it water) up the first steep 50Km climb to 4800m…which was unmarked on our map! We camped on the altiplano at 4500m and witnessed the flamingoes being frozen into their salt lakes each night.
We crossed more cols, including another unmarked 4800m climb and actually descended to the notorious Paso de Jama (4200m). On the 2007 trip we crossed more than a dozen 4000m cols. In spite of the severity of this trip, only routine chain maintenance was required; the bikes were superb and the Rohloff hubs were completely trouble free.
Autumn 2007, the Enduro and the Catalyst have now been combined into a single frame…the Sterling…this bike can be built up in many different ways to be either a superb, high performance hard tail enduro bike, a touring mountain bike, a disc-braked lightweight touring bike or a round-the-world, trailer pulling expedition bike. I swapped all the components from our Thorn Enduros onto a pair of Sterling frames...I wanted to give them a long (off) road test, to ensure that I could write about them from experience.
The Sterlings were such a beautiful ride that Fi and I decided to sell the Enduro frames and keep the Sterling frames.

The absolutely stunning Thorn Sterling in Pukka MTB spec.

Size shown M/L

Jan-Mar 2008 Hector and Bertha were prepared for a 10 week trip to Southern India. Their hubs had their fourth oil change, after which they were running more sweetly than ever. As the roads in India were known to almost always be tarmac, we fitted the steel AFDM forks, which would save wear and tear and servicing costs on the Vanilla suspension forks. In fact the tarmac varied from super smooth (but rarely rolled flat) to hideously broken. We had no intention of camping in India and only rear Ortlieb bags and bar bag were taken. Although the bikes were totally overbuilt for such a trip, they coped well with the conditions and frequently shared a hotel room with us. (In one hotel, with really tiny rooms, they actually had a single room of their own!)

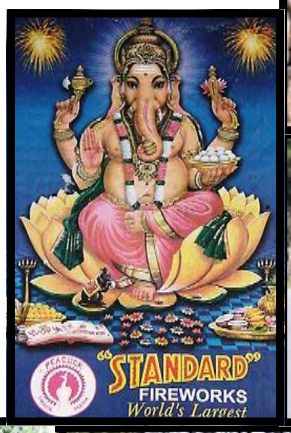
When we booked the tickets, British Airways offered to transport the bikes free of charge, if the bikes could be broken down and fitted into a particular sized box and the total weight was less than 23Kg. The S&S couplings enabled me to pack our bikes into a box small enough to qualify for this generous offer. We spent a few days, relaxing on a beach in Goa, which gave us 10 days to rendezvous with our friend Keith, who was having his 50th birthday party, at a very up market resort in Kerala. Fiona and I rode down the coastal highway from Goa, through Karnataka to Kerala, it's like a 1200Km long village! Keith's birthday party was great, it was a view into a whole new world of luxury and expense! We were glad to be back on our bikes, doing what we love the most...travelling low budget!

We crossed the Western Ghats many times, visiting various hill stations and we also cycled through several national parks, where elephants, tigers and leopards roamed. We did see elephants but we were never going to see tigers. Thanks to the demand for tiger products in Chinese medicine, they are almost extinct! Some of our friends were horrified when they heard that we were planning to cycle in India, due to the drivers, the roads and the heat. The roads were fine...much better than in South America!

Actually we had very few problems with Indian drivers. There is little traffic, outside of urban areas and away from main highways. We never cycled in big cities, because we would certainly have got lost. It may seem like chaos in towns but everything is happening at very low speed. Nobody wants to actually stop, not because they are aggressive but because they are all trying to drive as economically as possible...the cost of fuel represents a large percentage of their income.

There is also an overriding principal that "might is right" yet cycles, whilst at the bottom the pecking order, are accepted and respected as vehicles. Once you understand these principals and once you realise that other drivers actually expect you to keep moving, cycling in India is very easy. Road rage simply doesn't exist...unless you bring it with you!

In Tamil Nadu, we visited small villages and ate in small "cafes" with local workers, who had never seen white people before. These Indian villagers loved Hector and Bertha! Travelling by bicycle not only allows you to get to such places, it almost guarantees acceptance and respect.



In April 2008, we received the shipment of our "Thorn narrow bars".
I designed a narrow central bulge, to enable the brake levers to be fitted as far inboard as possible. This leaves room for the shifter, grips and bar ends for a total overall width of 515mm. I find that these bars, when fitted with Ergon grips and ergo control (rubber covered) bar ends, offer 2 really comfortable positions which encourage spirited riding over long distances. I built up a pair of Sport Tours, to be as light as possible (without being silly) and I fitted them with the "narrow bars". We use these bikes for fast summer rides and Audax rides...when we're not using the tandem.

Feb 2009.

Hector and Bertha had their Vanilla forks serviced and fitted, their hubs were given another oil change and they were then packed into boxes ready for our flight to Montevideo. Our plan was to cycle across Uruguay and Argentina and then climb over one of the monster passes into Chile, touch the Pacific and return via another monster pass. However the snow at Heathrow prevented us from leaving on the Monday although, stupidly, BAA would not confirm to Iberia that we could not take off that day and we had to journey to Heathrow in very dangerous conditions, or risk losing our ticket. Iberia were very good and, although they offered to fly us to Montevideo on the next Thursday, I knew that more heavy snow was expected that day, Fi and I could see our planned route, was gradually becoming very tight for time. Iberia offered us an alternative destination and we managed to negotiate return flights to Santiago de Chile on the Wednesday.
There is a huge chunk of Chile that we had not really explored, between Santiago and the Lake district and we identified 5 big trans Andean passes that we had not previously ridden. We started with what was supposed to be an easy week's ride, from central Santiago to the coast at Pichilemu and on to Talca. With all of our experience, we should have known that the ripio, in the costal range of hills, would be tough going and our "easy start" had some of the toughest going of the whole trip, deep sand is the hardest surface to cycle on.

We did cross the Andes 6 times, but one of the big passes was already closed when we got to it, so we only crossed 4 new passes.
Although we never got much above 2500m, some of the ripio was incredibly tough, with sections of loose rocks alternating with sections of deep sand, luckily, unlike our legs, the Rohloff hubs were completely unaffected by this sand. We visited Argentina 3 times during this trip but most of the time we were in Chile. Between the 2nd pass and the 3rd, we spent 3 days belting along the hard shoulder of the Pan American highway, covering 400 km. This was a strange experience with big trucks passing constantly and waving to us. On the opposite carriageway we spotted a fleet of more than 30 combine harvesters going from one grain region to the next. There were lots of little stalls literally on the shoulder, feral chickens actually crossing the road and the occasional big shiny Copec service station, where real espresso could be purchased. We enjoyed this glimpse into the Valle Central, where the majority of Chileans live but it is the majesty, grandeur and solitude of the Andes that we really love and the ability to easily find a suitable wild camping pitch makes it possible for us to be there.

Jan to Mar 2010

The snows in early Jan gave us cause for concern but we were lucky to depart from Heathrow for South America again. We landed in Montevideo (Uruguay) and stepped into blazing sunshine and temps in the low 30's...it was certainly a shock to the system but this cool weather was not to last. As we pointed Hector and Bertha westwards we lost the cooling breeze from the Atlantic and picked up a blistering, humid wind from Brazil. Within a week we were dripping in daytime temperatures in the low 40's. We liked Uruguay, it is very green and has many exotic birds and butterflies, delicious fruit, cheap hotels (with air con!) and they just might have even better beef than Argentina. The local grape (Tannat) produces a red which is heavy, heady and very complex.

We felt that we had to visit Fray Bentos (yes it is a city) as I remember the pies and corned beef being a real treat in my post rationing childhood days. The bridge to Argentina was closed and we had to head further north before we crossed the Rio Uruguay, which meant that we saw afternoon temperatures in the mid 40's.

Summer 2009. Fiona and I are mostly riding the tandem and the mountainbikes this year...we have "blasted" around several Audax rides on the tandem and we have already completed several long off road events including the 75Km Marin Rough Ride.
We had a very wet but nevertheless highly enjoyable, cycle camping trip in North Wales over the August Bank Holiday.
In September we drove through France and, starting near Grenoble commenced a 14 day, self supported cycle camping tour taking in much of the route des Grand Alps. We took in 14 major climbs including the Bonnet, Galibier and Izoard. The cycling was sublime and the bikes performed with their usual solid reliability. Early snow had closed the Bonnet and we stayed in an inexpensive hotel and we were able to ride to the top of the Bonnet and back down as a day ride with just the saddlebags. Of course it was tough cycling these cols with full camping kit but the camping kit allowed us to afford to take this trip and it meant we did not have the worry of finding a room for the night.
We rode the notorious Dartmoor Devil Audax (2800m+ climbing) on our Sport Tours at the end of October and completed the demanding course just within the time limit.
We took things fairly easy, on the cycling front, during November and December and concentrated on projects at work, in the loft and we also got to tidy up our "wine cellar".

We continued belting across the Pampas, over the Rio Parana, through Rosario, where we enjoyed a few days in a more up market hotel and had a film fest and headed on back roads for Cordoba. We had the most spectacular thunderstorms, the whole sky light up in violet light. By now 100Km days in 45 degree heat and high humidity were quite normal and no problem, as long as we kept cycling briskly. The 32 to 35 degree heat at 2 in the morning was more difficult to cope with and we had long been forced to abandon thoughts of camping, until we reached the mountains. The day we encountered 100% humidity and 45 degrees was almost insufferable but it ended in the most spectacular thunderstorm and the temp dropped accordingly for a few days.

We crossed the bad lands between the Sierras de Cordoba and the Andes where summer temperatures of 55 degrees are common and were lucky that we only had to climb the long drags to 1500m in 45 degrees. By now the humidity had dropped and we finally arrived at the last shop in Argentina, in the town of Vinchina; where I was immediately laid prostrate with food poisoning and a cold fever. By the time I was able to stand again, we had just over 7 days to make the 300Km crossing before Chilean customs closed Paso Pircas Negras for the year.

There had been no information on cycling the Pircas Negras without support, all we could find were accounts of a supported expedition (no bags to carry and endless water) which had a 65% failure rate. We reckon these guys climbed too high too soon...easy to do if you are young, fit and pumped with testosterone. The top of the Pircas Negras crossing is a 100Km wide undulating plateau at over 4000m; a desolate, majestic, brightly coloured volcanic wasteland of crumbling rocks, sand and dust with a backdrop of snowy peaks rising to over 6000m. It has no water other than a large salt lake. The 100Km gusts blasted sand at us and the night temperatures dropped to minus15C. There are very few vehicles and none at all between 16.00 and 11.00. Many people had tried to warn us of this crossing but we have experienced remote high altitude, lack of water, raging relentless winds and freezing nights before...but not all on the same day!

We managed just 30Km on the second day on the exposed plateau, we climbed to 4481m and camped at over 4350m for the night in the "shelter" of a drainage ditch. This was the night that the earthquake struck in Pichilemu (where we passed through last year) we didn't feel it, as we were camped on deep sand but others, who were this far North, had felt the earth move, as we later found out.

We were very tired when we eventually reached the international limit the next afternoon and gazed westwards, over seemingly endless mountains. We spotted a ripio road clawing its way into the distance, in the opposite direction to that which we were taking and we wondered who would travel on such a road?…After a brisk descent and a sharp 180 degree turn we had our answer...us!

We really struggled on the steep 300m climb but eventually we really did have the descent we were expecting.

Part way down we both decided that it would be a shame not to enjoy another high mountain sunrise, so we made camp at 3300m, after all, although tomorrow was the last day the pass was open for the year it was downhill all the way.

We first found out about the earthquake when we arrived at Chilean customs at midday, they were packing up early and closing the pass, as many of them were heading South, to help with the rescue efforts needed in the earthquake.

We continued down the valley and camped the night little knowing that we had one more big climb (nearly 900m to 3115m) before we could continue our descent to Copiapo at 382m.

We rested for a few days in Copiapo, eventually the internet came back on line and we were able to reassure friends and family that we were not affected by the earthquake.

We crossed back into Argentina by the Paso San Francisco (500Km between shops; so we bought provisions for 10 days) We experienced the highest temperature of the trip, 47 degrees but it was not a problem for us because, in the Atacama, humidity is exceptionally low. Water was a problem and we climbed to nearly 4800m, with a good descent on the way to the top. The descent to Fiambala had many long drags, a strong headwind and spectacular scenery.

We caught a bus from Fiambala to Cordoba, where we had a boozy steak lunch and watched Avatar (for the second time this trip) and then caught a night bus on to Buenos Aires. I re-assembled the bikes at the bus station, whilst Fiona maintained a vigilant watch on our belongings. We then rode to the port, where we

crossed the Rio Plata and cycle camped the 300km back to Montevideo, to rendezvous with the bike boxes. The blistering Jan heat had dissipated into pleasantly warm March sunshine and we were again charmed by the greenness and gentleness of Uruguay. Fiona has written up the Pircas Negras report, which will make it easier for those who wish to make this crossing and it has been posted on the web. I have made a pdf available, as a download, from our site.

Return to work I have been delighted by the response to the suspension compatible Nomad Mk2, which owes everything to the "work" Fiona and I have put in on Hector and Bertha. Obviously we could never part with our bikes but I would have no hesitation whatsoever, from a kit point of view, in tackling any of our trips on Mk2 Nomads, they are just as "bombproof" as H&B. Reliability is everything, as far as I am concerned, there are too many other things to worry about, when preparing for big trips, without wondering if your bike will arrive damaged, or if it will carry whatever you need, whenever you need, wherever you need it to take you.

THORN

Nomad Mk2

Size 565L, with lots of accessories

April 2010 to Jan 2011. Fiona and I dusted the tandem off and rode lots of 200km Audax rides and even more 100km rides. We managed a week's cycle camping in Normandy, a couple of long MTB events, more Audax rides, a very wet four day tour in the Yorkshire dales, and my 60th birthday! We also had a blissful week, in late September, cycle camping in the Upper Dordogne.

I have been working like mad, trying to update our brochures before Fiona and I depart in mid Jan for yet one more trip to Argentina!

I have also been working on a very special project. I can't describe how much time this one has taken up and it has been the reason for our late departure from the joys of England in January!

We have crossed the Andes 22 times so far, yet we have never been to Tierra del Fuego or to Iguazu falls...we hope to visit both, on this next trip...the trouble is they are around 4,500km apart!

Yes we remember that we said we'd never attempt to cycle in southern Patagonia again...but it can't really have been that windy can it?

Jan to Mar 2011

I packed Hector and Bertha into their boxes, Fiona and I got a taxi to Bristol airport, followed by a flight to Charles de Gaul. We flew into Buenos Aires into the late January heat and humidity and flew out again later that same day, bound for Rio Gallegos, in the far south of Patagonia. We reassembled our bikes and abandoned the boxes and cycled into the sleeping town, where we rested from our flights, purchased provisions, got our kit ready and headed off, on Ruta 3 for Ushuaia. After a few days we managed to find some much quieter roads, the barren, windswept flat lands of the north of Tierra del Fuego changed to rolling green hills, then a few trees started to appear and eventually we were in rugged forested wilderness shared only with Guanaco, Rheas, Condors and the occasional vehicle. Eventually we rejoined Ruta 3 where we stopped several times to chat with cyclists

heading north . Our final day cycling south was an exceptionally tough day battling into a cold headwind, crossing Paso Garibaldi and slogging along the rolling road into Ushuaia. Nothing prepared us adequately for Ushuaia! It certainly has a "frontier feel" with its hilly streets. On the main drag we rubbed shoulders with scruffy backpackers at the end of their travels, shiny backpackers at the start of their travels and very well heeled tourists, about to embark on Antarctic cruises, in his and hers Gore-Tex or designer down filled jackets...the streets were busy! The restaurants and kit shops were busy. All this hustle and bustle was set against a backdrop of huge, pointy, snow capped mountains to the north and east and the crystal blue water of the Beagle channel to the south and west.

We were quite prepared to hate Ushuaia but we loved it! We stayed for 4 nights. It had been our intention to catch a bus out of Ushuaia...we had thought we may get the bus to Osorno or Bariloche (a couple of thousand Kms further north) but, because every bus was fully booked for ages, we would have had a long wait. Ushuaia is an expensive place to hang out and, in any case, we were anxious to continue with our adventure, so we decided to cycle off the island.



Our route took us on Ruta3 for a few days, where we met many cyclists heading for Ushuaia. Out of 12 bikes, there were 3 Thorns (14 bikes and 5 Thorns, if you count ours). Of these cyclists, some had started in Alaska, following the Pan Am and crossing the Andes once, via Ruta7 and then picking up Ruta3 on Argentina's east coast (Mark Beaumont's route). We could never stand to follow such a boring route...a few days on the busy and boring Ruta 3 was enough for us! If you follow this Route (in reverse) to Alaska, I believe that you will have left the best of the scenery behind, until you reach Alaska, by the evening of your first day!

Most of the other cyclists had begun their trip in Argentina; Bariloche and Salta being popular starting points and most of them had cycled down the notorious RN 40 (Ruta Cuarenta), which runs the length of Argentina, with the majestic high peaks of the Andes constantly to be seen in the east. Ruta Cuarenta is to the Argentine psyche as route 66 is to US culture...and it is steeped in legend and history. We were dismayed that none of the cyclists we met had cycled over the Andes, probably because they had all miscalculated how few miles it is possible to cycle in a day, every day...even when young and fully fit...they were all constrained by time! But, in our opinion, even these more adventurous types, had missed out by not taking the dirt road, that runs from Porvenir to Rio Grande, this road takes you through the pristine wilderness that is Chilean Tierra del Fuego. It is the size of Wales but only has a population of 7000 and 5500 inhabitants live in Porvenir. You ought to have a 95% certainty of a tail wind for most of this route...if travelling South West.

Travelling North East, we had a head wind of course!

We had calculated that it would take us 5 days, we had food for 5 but, as we were expecting to be able to buy more provisions at Cameron, we decided not to head into and then re-trace again, from Rio Grande. There were no provisions at Cameron and it took us 7 days to battle the wind to Porvenir.

We frequently hear locals say of their country, that you can experience 4 seasons in one day. Personally, I don't see how you can have spring and autumn in the same day.

The weather in Tierra del Fuego really could throw 3 seasons at you in one day. We had long hours of daylight but it was too cold for us to make an early start or continue cycling into the evening, when temperatures were frequently down to 4°C. We experienced bright, strong sunshine with bitter cold winds, whilst being stung by a sudden hail storm from a black cloud 8Km away!

We even had one and a half days sweating in shorts and short sleeve tops.

The quality of the wild camping was the best that we have ever experienced. Tierra del Fuego is a tough destination but we are pleased that we took the decision to cycle tour in its beauty, rather than simply bash along some soulless road, at the beginning or the end of an adventure.

We crossed the straights of Magellan from Porvenir to Punta Arenas, where we planned to get a bus.

Yet again the busses were booked up for many days in advance and we decided to cycle 3 days back to Rio Gallegos, from where we got a bus the next day to Bariloche via Ruta 3. The 25 hour bus journey saved us approximately 25 days cycling.

We met Fiona's sister, Amanda and her partner Peter in Bariloche and we spent some days with them in Argentina's premier ski resort, before we cycled together for 7 days to Villa Rica in the Chilean lake district.







Some of the idyllic wild camping sites we found and one site that was far from idyllic but we were pleased to find it nevertheless!

We parted company with Amanda and Peter and Fi and I belted up the Pan Am for a day with a tailwind, then crawled up the Pan Am for a day into a monster headwind, before squelching up the Pan Am for a day in seriously heavy rain. We dried out in luxury in Los Angeles, where we saw the King's Speech, before slowly heading up Paso Pichachen. The heavy rain we'd experienced a few days before on the Pan Am, had fallen as heavy snow in the mountains, which were still covered in black cloud. We were in no rush to catch up with the weather and. I'm pleased to say that, for once we got it right and we arrived on the top of the mountain on the first day of blue sky. We were treated to a campsite in a grassy hollow, in the middle of a volcanic wasteland, from where we witnessed the sun going down behind Vn. Antuco. It was the most spectacular sunset we can ever remember seeing. A few days later we arrived in Chos Malal, where we decided to turn right and follow Ruta 40, which was paved for this section, to Zapala, where we booked our bus. We then cycled east to Neuquén.
We stayed for 2 nights in a nice hotel in Neuquén. We obtained some bubble wrap and some thick plastic sheet. We broke down the bikes, wrapped each section and the forks separately in bubble wrap, taped the sections into a bundle, which we covered in the thick plastic and then we caught an overnight bus to Buenos Aires for our flight home.

Once again we have completed a demanding tour, without any mechanical problems whatsoever...which is just as well, considering the extreme remoteness of some of the places we have visited!

It is certainly very windy in Tierra del Fuego and in Southern Patagonia...the Fuegans of course say it is windier there but although we struggled at times, we never experienced the same strength of wind as we had encountered in Torres del Paine and El Calafate on our 2005 trip. We now think it likely that, contrary to what we were told at the time, the winds in 2005 were exceptional...but, of course, the winds in 2011 may have been exceptionally light!

Before our trip I equipped Hector and Bertha with the new Thorn Flat Track bars, which I designed as the successor to the Comfort bar, for most applications.
These bars are 640mm wide and are designed to be shortened as required...down to 480mm if necessary. They have a comfortable 10 degree bend, immediately after the very short centre swell but, otherwise they are…er...flat!
The ideal is that, whilst they do not look as elegant as the Comfort bars, they do not have the wasted width, that the elegant bends produce. It is almost like playing a gramophone record (A what ?!?) here in sales…"no you can't fit bar ends to comfort bars...yes they are 620mm wide but the bends take up so much of the width, that the straight section is only long enough for the shifter and the grips"

I had fitted ski bends covered with grab on, inside of the shifter on the Flat Track bars and I was very hopeful that this would provide us with the necessary leverage on really rough sections of Ripio, whilst allowing us to get more aerodynamic, when riding into the howling wind. In the real world, the bar ends were insufficiently wide apart to allow adequate control in the strong and gusty winds, Within a week, I had swapped both bikes around to have the bar ends in the conventional position...at the ends of the bars! I found that initially my upper arms ached from using bar ends so wide apart but, within a couple of weeks, I was comfortable. When I got home, I noticed how much more muscle I had in my upper arms.
Whilst 640mm wide bars and bar ends are unnecessarily wide for European cycling on sealed roads, I would hate to ride with big loads, in high winds on broken and or loose surfaces with anything narrower! I have found that 590mm wide flat track bars with ski bends suits me well for general cycling and for fast road work, our 515mm wide Thorn Narrow bars with bar ends work well for me.
Talking of fast road work, I have been riding a pre-production sample of our new bike, which we launched this summer...the 700c THORN MERCURY. I have designed a new Reynolds 853 tube set for these bikes, which feature, I believe, never previously used tube diameters. on the top tube and seat tube...30.2mm (An inch and three sixteenths) The tubeset also consists of a conical down tube, cranked chainstays and ovalised seat stays.
I've designed a new mini eccentric BB and I designed the Mercury to run with either deep drop caliper brakes or with disc brakes.

Fiona getting her breath back after cresting yet another long steep climb, into a raging headwind on

Ruta 40. Her FLAT TRACK bars have been left full width and have been fitted with ski bends.

Thorn Mercury
Size 550S
Colour:
Sky blue Team

There will be a choice of 6 different front forks...the appropriate choice of which will focus the Mercury precisely for the owner's intended application.

Thorn Mercury
Size 580L
Colour: White Team

The Mercury is designed as a sports bike or sports touring bike - it can also be built into a very special bike for lightweight camping on reasonably good sealed roads. The Mercury features several things that, although desirable on a sports bike, I would hate to see on an expedition touring bike...mini eccentric, disc brakes and lightweight tube set!
The Mercury is now available (Aug 2013) in 6 different frame finishes and 8 different sizes, that's 4 sizes, each with long or short top tube options.
I rode the very hilly 200km Dorset Coast Audax on the Mercury and I was delighted with it. It has the magical qualities of being exceptionally comfortable and yet being very stiff at the same time. Only top quality steel can provide these two, seemingly disparate qualities in the same frame. The Mercury rewards extra effort immediately, which encourages extra effort!

NOMAD "X" series.
I have also designed 4 new sizes of Nomad Mk2. The reason for introducing the "X" series frames, is that almost everybody who enquired about the Sterling was looking for a lighter version of the Mk2 Nomad...many also wanted us to retrofit S&S couplings too. Instead of explaining why the Sterling wasn't the bike for them, I decided to make the bike that these customers were asking for!
The "X" series Nomads retain the mega strong, thick gauge tubing but the tubing is smaller in diameter: 28.6mm top tube, 30.2mm seat tube, 31.8mm down tube and I've also specified 16mm seat stays. These changes only save a small amount of weight (300g) compared to the standard Nomad frames but the reason for making these frames, is not to save loads of weight, it is that they are more comfortable to ride with smaller loads. Not everybody, who wants a solidly built bike, has any intention of carrying 35+ Kg!
This tubeset means that the "X" series Nomad are a better choice for alpine mountainbike touring.
They are also a sensible choice for those wishing to use an EX box hub for lighterweight cycle touring...especially if S&S couplings are required.
The small sizes may even be a better choice for some small, light cyclists, who wish to carry heavy kit on genuine expeditions.
I have also specified open stainless guides for the rear brake run.
These allow the "X" series Nomad to use a hydraulic rear disc brake, which is the prefered option for alpine mountainbiking and be able to fit, or remove the complete system without having to re-bleed the brake. It is especially useful to be able to send the complete system off for servicing.
The colours are matt black or Tonka Yellow and the 4 sizes are available with or without S&S couplings.

Thorn X series Nomad
(shown with a suss fork)
Size X560M

Jan 2012.

Last year was a strange year for me; one of my coronary arteries blocked completely in May and I had to have 3 stents fitted into it. Unbeknown to me, I had a pre-existing restriction, which must have been getting progressively worse...I did think that the Andes were slightly tougher than usual on our last trip...but I simply put this down to aging!
This condition really made its presence felt on the third tough climb of the afternoon, on a Quantock hills MTB ride, when the passage through the restriction must have suddenly blocked...I found it difficult to continue to cycle up the hill, due to my arms loosing their strength and I found it difficult to breathe. Luckily, being so active, had apparently encouraged a co-lateral blood supply to develop, to feed the heart muscle, at the other side of the restriction and consequently I suffered no damage to heart muscle or valves. Indeed, it took several days to realise that something more serious than a trapped nerve was causing the weird feelings in my arms and the tightness in my chest...which were making cycling difficult and unpleasant. I walked in for my treadmill test and was kept in hospital and operated on the next day. Our NHS is at its most wonderful when it comes to acute care!
The operation has been a great success and, as I am fortunate to have very low blood pressure and a slow resting heart rate, I am spared from having to take some of the drugs often prescribed to cardiac patients...this makes it easier for me to take exercise.

Fiona and I will be heading off, in mid January, to the Philippines. We plan to travel light on an island-hopping cycle tour. Our intention is to stay in cheap hotels. We expect to enjoy some world class snorkeling and, hopefully, some good fishing too. If needs be, we will be able to take things more steadily on this trip. I hope that I prove to be fitter than I've been for years...but I'm prepared to accept that I may need to rest, between hard days of cycling. The medication, which is necessary for 12 months after angioplasty, to prevent clots, is causing me to bruise very easily and, I believe, causing my joints to ache more than usual after strenuous exercise. Whatever...I shall enjoy this year's trip...not least because I realise how lucky I am to still be here and I'm reminded that we can never know what the future holds...although I do hope it holds another trip or two into the high Andes! Que será será.
Just before Christmas, I swapped the bits from our Sport Tour bikes into Nomad X series frames, after I'd converted the hubs to EX box and I'm looking forward to giving these bikes a thorough test. The mild Christmas weather enabled us to shake the bikes down well before the trip and our initial feelings are that these will be superb bikes for such an adventure.

A small concrete road through the mountains.

My size X590M Nomad.

April 2012.

Our Philippine trip.

Fiona and I had a great time in the Philippines, the people were very friendly and we had no hassle...I should qualify that by saying that we didn't go anywhere near Manila.
We flew into Cebu City, where we stayed for a couple of days and officially extended our visit. We left by ferry and cycled around the islands of Bohol and then Negros, where we managed to get a beach front room close to the epicenter of a 6.9 earthquake. (The one that devastated Christchurch was 6.3). We literally ran for the hills. It was more excitement that we needed but my heart survived the quake and the 900 aftershocks. Fortunately the tsunami never came to much. Tragically there was a landslide that killed over 100 people. Many of the road bridges ahead of us were destroyed, which meant that we had to retrace our route back over the mountains to leave Negros for the island of Panay. The villagers still waved to us and smiled even though their homes had been flattened...we were humbled!

The concrete runs out.

North West Panay.

We followed this motorcycle and sidecar with its load for several miles before it reached its destination where we took this pic.

Boracay Beach

Panay was our favorite island. The main city Iloilo, has fabulous sea food. We left Iloilo for a 2 night mini tour of the island of Guimaras, which is justifiably famous as the home of the world's sweetest fruit - the delicious Guimaras Yellow Mango. Guimaras was particularly recommended as a cycling destination, it has some great roads and, apparently, some excellent mountain biking.
The coast road in the north west of Panay offers world class cycling.

We stayed a German run beach resort for a few days and I learned to snorkel and to swim out of my depth for the first time in my life.
We were not sure about visiting the tiny island of Boracay...Lonely Planet warns that it is a very popular destination with Koreans and has (almost) direct flights from Seoul. We needn't have worried, Boracay is paradise, the white sand beach was kept meticulously groomed, the Koreans knew how to really enjoy themselves without being rowdy and we found that Korean cuisine is delicious!
We carried on cycling around Panay and returned to Iloilo where, for the cost of a nice B&B in the UK, we booked a stateroom on a liner for the long voyage to Cagayan de Oro in northern Mindanao. I enjoyed looking at the ocean from our room directly underneath the bridge.
We cycled northwards on costal roads and we visited another paradise island, Camiguin, where we watched villagers land a shoal of fish from the beach. Mainland Mindanao felt a little more edgy than the other islands, there seemed to be greater poverty and yet there were more big German 4X4s, with blacked out windows, than we'd seen before. Fiona and I were both happier when we got the ferry to the lush, forested south of the island of Leyte.
We ate well and very healthily in the Philippines - often from roadside stalls. The chickens tasted great, we could see that they were free range and we believe that they were all eating natural food - the eggs were good too!
We had some fantastic fish and some excellent fruit.
We liked the Filipinos. In our opinion, Filipinos, the women in particular, are very hard working. They are very inventive and the things they make are made properly and made to last - the Jeepneys being a prime example. Used Isuzu diesel engines are purchased from Japan, they are re-built and reconditioned and installed into chassis which are made locally, then coach-built bodies and interiors are mounted to the chassis.
For the most part Filipinos are very careful with their use of resources. Low energy bulbs are used extensively and, outside large cities, motorcycles and sidecars are used for all manner of tasks. The motorcycles used are generally 125cc and the greatest number of people we saw on a motorbike and sidecar was 11 (Yes eleven!). We cycled at around 16mph and the motorcycles and sidecars travel at around 21mph. There are loads of cyclists and even pedal cycles and sidecars plying their trade.
Not all is rosy however, the birthrate appears to be too high to be sustainable - there are swarms of beautifully behaved and very beautiful children in every village. We visited a local school and there was 1 laptop to share between 400 pupils. Even the rich West would struggle to educate such a high percentage of children to an advanced level.
Apparently there is also a lot of corruption but then, where in the world is this not so?
The trip was a great success, we managed to visit 9 different islands and the only forms of transport we used were our bikes and ferries. I managed to swim 500m without putting a foot down...previously a width would have been my limit! The cycling around the coast of most islands was not particularly difficult...except for the very high temperatures, often high 30's or low 40's and near 100% humidity. Travelling at 16mph, we had a 16mph breeze and we were fine - but when we stopped, we became soaked in minutes. The centers of all the islands we cycled were very mountainous, with some very steep climbs, the route from the east of Cebu over several folds of mountains, to the west was one of the hardest day's cycling I've ever experienced.
The X series Nomads were superb, they were quick and very comfortable, the hubs never missed a beat and all I needed to do was to adjust the eccentrics at 2000Km.

A NEW RAVEN set up for heavy touring.

Back at work 2012,

I've been very busy bringing the **NEW RAVEN** to market. This bike replaces both the Raven Tour and the Raven Sport Tour and is a sportier Raven Tour or a more touring RST, depending upon how you look at it.
I've also updated our (derailleur geared) **Sherpa** and the Mk3 version is now also available.
The **NEW RAVEN** is made in exactly the same frame sizes as our derailleur Sherpa, although they each have very specific frames. I hope that this will make sizing easier.
The **NEW RAVEN** and **Sherpa** each share the choice of two different forks. These are either:-
(1) A Reynolds Cro-Mo fork, with all the braze-ons, including lo-loader bosses.
Or (2) A Reynolds 853c fork, with lightweight "c" (competition weight) blades and a lightweight 853 steerer, these have mudguard bosses etc. but offer no facility for lo-loaders. This gives the 853c fork a clean look and makes certain that the lightweight blades don't get overloaded.
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I've also been developing and testing new, lightweight 700c steel forks.
I've used **Reynolds 853c blades** with a cast fork crown and **Reynolds 853 steerer.** I've had 2 different versions of these 700c forks made, neither of these forks have lo-loader bosses but both versions have, as you'd expect, stainless bosses for the direct
There's a V brake 700c fork, which will take tyres up to 37c with mudguards. There is also a deep drop calliper brake version which will take 28c tyres with mudguards. These forks will also take some 32c tyres - Schwalbe Marathon Supreme for example - with close but sufficient clearance - but please note, it may be necessary to deflate the front tyre to remove the wheel with these 32c tyres.

I can categorically state that these are the most comfortable forks that I've ever used on the road.

We have both these forks available, in many different colours and 2 different offsets, to suit our Mercury frames. The Deep drop calliper brake version is also a superb option on our derailleur geared Thorn Audax bike.

Here's a really nice bike for European Touring - it's a Mercury running 35c tyres, with a cable disc on the back and a V brake on the fork. It will stop in freak mountain weather, whilst giving ride quality and confidence only obtainable from a steel fork.

2013 Mid Jan to the end of March.

The Carretera Austral re-visited.

Fi and I visited South America, for probably the last time. Our original plan was to ride some of the lower passes - south of Santiago. If all had gone well, we'd progress to ride the 4755m Paso Agua Negra again but from East to West this time.

Jan/Feb 2013 turned out to be unseasonably hot in Chile and we soon realized that we were not in good enough shape to cope with a steep 2580m pass, with heavy loads in this heat - well, not straight away. So we quickly decided to ride a big 7 day loop, to get acclimatized, before we tackled the passes. We knew, from our 2009 trip, that the roads on this loop would still be tough - and they were!

We arrived back at Curico, feeling much fitter and almost used to the heat. We stocked up with 12 days' worth of supplies and headed off to Paso del Planchon. As we headed East on 1 particularly grueling day, we'd had to share the road with literally hundreds of large trucks going to and from a mine. The drivers were friendly and showed us huge respect but there were often dense clouds of dust.

On the fourth day, we'd climbed to 1600m, where we reached the Chilean border guards - they informed us that the pass had been closed, due to a rock fall. We turned around and descended to a nice hotel, where we contemplated our options.

As I said, it was very hot, it would be even hotter up North and we didn't want to climb the Agua Negra in such conditions, especially without having sufficient mountain miles in our legs. We decided instead to go South and ride the Carretera Austral again.

We rode to Talca, where we had to wait 2 days for tickets to catch a bus to Puerto Montt; which is 1000Km South. This would save us at least 7 days of riding the relatively uninspiring Pan Am Highway - time which would be better spent in awesome Patagonia! Whilst in Talca, we also purchased bus tickets to return from Puerto Montt to Santiago, at the end of our trip - on the day **we** wanted!

We'd ridden the Carretera South to North in 2005, when very few cyclists had ridden it. We knew that it was now a very popular route,

The 2005 trip had been very special for us - and we'd been so lucky with the weather, that we'd previously thought that we wouldn't want to risk souring our memories.

We remembered the 1200Km long Carretera as being tough going and being especially hard on bikes. It was and still is, mostly ripio (dirt roads with very rough and loose surfaces) apart from 100km either side of the town of Coyhaiqui, where there'd been tarmac. In 2005 the Carretera and was dotted with small communities, which were about 20-30km apart, with peoples' front rooms being used as mini shops. There were almost no camp sites back then, people would laugh if we asked about hot water but it had the best wild camping opportunities anywhere we've ever been - apart from those we've found on the passes over the Andes.

On our first day out of Puerto Montt, we met a young French couple, they' were scorched and dusty having had sunshine, with just 1 day of rain, since they set off from El Calafate 5 weeks previously.

We had hot sunny, dusty days, until the day after we'd taken the boat over to Puerto Gonzalo, which lies at the north of Parc Pumalin. On the same boat were 7 other cyclists...all of them Chileans...6 university students, 2 of whom were making a road trip with their father. We also had the first of several meetings with a young Canadian couple. Parc Pumalin is beautiful, set in dense temperate rain forest, with excellent facilities, we dawdled our way through it, going on short walks and we spent the evenings in very pleasant company. Then the glorious weather broke and we had low grey cloud and very heavy rain for a few days. We stayed for 3 days, under the shelter of a fogon at one of the camp sites, watching Vulcan Chaiten appear and disappear into the clouds.

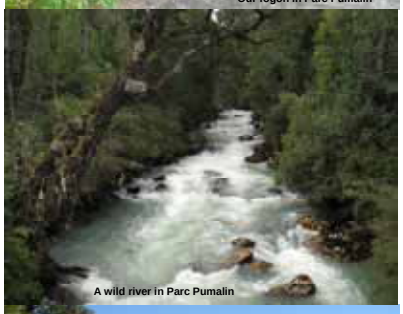
Vn. Chaiten had awoken from a long sleep and erupted violently in May 2008, decimating a huge swathe of the National Park.

Eventually, we had a break in the weather and we pushed on towards the port of Chaiten itself, unfortunately it poured again en route, we arrived in a very busy Chaiten absolutely soaked. We grabbed the only accommodation we could find and dried our things out.

Some tarmac had been laid on the road south, in the intervening years and, the next day we made the most of this wide 50Km stretch. Soon we were slogging along on ripio again and, at the foot of a tough climb, before yet more road works, we camped wild beside the magnificent Rio Yelcho.


Quarry Trucks.


Our fogon in Parc Pumalin


A wild river in Parc Pumalin


Soft Ripio with dense vegetation.


Road improvements on the Carretera


Aftermath of Vn. Chaiten's eruption in Parc Pumalin


Wild (and wet) camping by Rio Futaleufu

Whilst smooth blacktop may sound preferable to ride on, the reality is that wide verges are cut on each side of the road and the magical experience of riding so close to the dense vegetation is lost.

We spent several more weeks on these rough roads, which wound over steeply pitched climbs. We camped wild beside the turquoise waters of the mighty Rio Futaleufú. We rode narrow roads winding between dense walls of Fuchsia and watched humming birds sip nectar.

Occasionally we stayed at one of the many small camp sites, which are now commonplace alongside the Carretera, where we enjoyed a hot shower.

We met many groups of cyclists coming the other way, with whom we frequently shared information regarding shops, camp sites, hills, distances and road surfaces. We remember a Kiwi girl and her English partner who were riding from Ushuaia to Fairbanks. This was her first time on a cycling holiday - what a trip to pick! She was suffering from various aches and pains due to lack of preparation and a poorly fitting bike. We also got to hear about some of the other characters, who were riding in the same direction as us, who we were yet to meet. We even got to hear about people we would soon meet who were coming towards us - English Dave turned up on cue on his Thorn. I believe that our reputation, as the people from Thorn, who had a seemingly everlasting bottle of Whisky, also travelled in both directions. With there being the possibility of so many interesting side trips, it was easy to catch up with younger and faster riders. We eventually met up with American Dave and Argentine Chris and many others and we enjoyed other cyclists' company on many evenings. This was so unlike any of our previous trips! When we reached the halfway point - Coyhaiqui, we stayed for 3 days at a camp site, where there were 10 other cyclists...we went out for meals and cocktails and talked like old friends.

One of these Guys was Willy, from Germany, who had cycled all the way from Columbia sticking to the Pan Am, on an Aluminium bike with 700 x 32c tyres. He thought that Hector and Bertha were nice but overbuilt and that their tyres were too fat and too heavy...he'd had no trouble at all. Canadian Dave was out joining his partner Ellen, for a month, on her round the world cycle tour - you certainly picked the best part Dave! We met up with Natasha and Ton, from the Netherlands - for the third time!

Fi and I had no clearly defined plan, we were just heading for Villa O'Higgins...at the end of the Carretera and, when we got there, we planned to see how much time we had left, before deciding how we were going to get to Puerto Montt to get our bus back to Santiago.

There were ominous clouds in the sky, when we departed South from Coyhaiqui, on the smooth tarmac, we were up on some bleak, high, rolling pasture, when the storm hit us. It was really cold! We battled on, In full waterproofs, into the storm; eventually we descended to La Blanco, where we saw a small hotel. It looked very inviting, all the more so, when a tall American couple appeared at the door - in cycling kit!

The next day, in cool but dry weather, we crested the 1150m climb and descended to Cerro Castillo, where the tarmac ran out.

The next sections of ripio were very poor, cyclists warned us about the soft surfaces on either side of the crown. We stayed at a campsite at Puerto Tranquillo, on Lago General Carrera, where a young cyclist, on her Thorn RST, announced that we must be the Thorn people.

Whilst we shared a dram or two of White Horse, we heard that Annie was a teacher from Glasgow, on a 12 month career break and that she had crossed to the Americas as crew on a tall ship.

Annie, thought she'd seen Mark Beaumont on this small site...Fi and I exchanged slightly raised eyebrows but Annie was right! Mark was here with 2 others on an attempt to climb the 4000m lump of ice that is Co. San Valentin.

Mark was the only person who didn't talk to us on the campsite - he had a job to do - we later found out that they had to abandon the climb due to terrible weather.

The road got even tougher and we eventually arrived at a very smart town. Cochrane has been a scruffy little place in 2005 but it was a little jewel now! We stayed at a small hospedaje, with a lovely lady who owned a washing machine that we could use! We decided to treat ourselves and as we walked into the restaurant, we spotted Natasha and Ton so we joined them.

Fi and I thought that we had just enough time to make the boat crossing from Villa O'Higgins to Candelario Mancilla, ride through the Fitz Roy region of Argentina, through El Chalten and onto Puerto Natales in Chile - where we could get the very expensive Navimag ship and return directly to Puerto Montt, just in time for our bus. We told Natasha and Ton that we may see them yet again on this trip!

We also met Willy again - he was stuck in Cochrane, waiting for a bus back to Coyhaiqui - 1000Km of ripio had destroyed his bike; both carriers were broken, both wheels needed re-building and his transmission was shot. It had all been new in Columbia and had been no problem at all on the black top. When he asked me, I did have to admit to having to wipe my chain clean and apply lube twice and even to having to adjust the chain tension once!

In the end, Fi and I decided that the timings were too close to risk crossing Lago O' Higgins and we also learned of a new pass, which would take us over the Andes to join Ruta Cuarenta (RN 40) at Bajo Caracoles...we could ride through Perito Moreno and on to Bariloche all on the infamous Ruta 40. We even convinced ourselves that the raging winds, which we'd battled through in 2005 on Ruta 40 must have been abnormal and that the locals were just teasing us when they told us it was very normal to have winds this strong and, anyway that was 800Km further south! The weather, where we were, was settled - very hot and dry; the winds were light - what could possibly go wrong?

Paso Roballo was an absolute delight! It was billed as "the Chilean Serengeti" which was an exaggeration but we saw plenty of wildlife and the newly created National Park was being stripped of thousands of miles of barbed wire.

Just as we reached Argentine customs, the first heavy rain hit us and the wind got up. The wind seemed to turn with us as we looped Northwards towards Ruta 40. The wide open spaces of Argentine Patagonia are magnificent but excruciatingly difficult into a headwind. Then it started really raining! We were lucky to find the owner of a tourist estancia, who showed us to the shearers' hut to shelter the night in...it was too windy to even put our Hilleberg up!

After 2 days of these winds, we decided we couldn't possibly reach Bariloche in time and so we contemplated a new plan. If we headed west, from the oasis that is Perito Moreno, to Chile Chico, we could cross Lago General Carrera, the second largest lake in South America, by boat to Puerto Ibanez. We could re-cross the Paso Cerro Castillo and head North. In Coyhaiqui, we should be able to get tickets for a boat from Puerto Chacabuco, to the Island of Chiloe - the second largest island in South America. We could ride the length of Chiloe and cross back to the mainland, where we'd be a day's ride from Puerto Montt.

We adopted the new plan and took the road due west from Perito Morino. Once we'd left the shelter of the tall poplars, we discovered that the wind had turned 45°, to oppose us and what a wind this was! On one descent, which is steep enough to be marked as a hazard for cars, the wind, funneled by 2 small peaks saw me pushing as hard as I possibly could on the pedals to reach 5.6mph! When the driver of the flat bed truck, carrying bags of concrete, stopped and offered us a lift to Los Antiguos, there was no discussion between Fi and I! It was a relatively easy crossing from Los Antiguos to Chile Chico and our latest plan was working out well.

By now Autumn had arrived and it was bitterly cold at night, especially at 1100m, when we camped at the Ranger's campsite. We got caught in a violent hailstorm on the descent and we waited it out in a bus shelter. An hour later we saw a young Chilean cyclist heading for Puerto Natales on her own - she looked like a model but she appeared cycling fit and well kitted out - we hope that we managed not to sound negative, about what her route had in store.

When we reached Coyhaiqui we stayed at the same site we had camped at 3 week's previously but there were no other cyclists there now.

The boat trip to Chiloe lasted 36 hours and was an entertaining ordeal.

We liked Chiloe...there are no high mountains but several days saw us breaking this trip's records for meters climbed per kilometer! We were not surprised, we always say that relentless hills are much tougher than big mountains.

Much of Chiloe is still wilderness - the West is almost all National Park; the truly adventurous traveler could have a great time there. It was just out of season now, prices had dropped and we spent the rest of this trip in Cabanas, with wood burning stoves...cosy!

One day we picked enough blackberries to make a crumble and I made a pot of jam, to share with friends we'd met in Patagonia in 2005 - David and Christine, when they visited us, the weekend after we got back.

We saw just 2 more cyclists, as we pushed towards Puerto Montt - we think they had small Union Jacks on their bags but they disappeared down a fast hill and that was that...we'll never know. We didn't envy them, going South at this time of year (Mid March).

I can't recommend the Carretera Austral too highly as a cycling destination. Basic provisions; pasta, rice, oats, lentils, bread, crackers, cheese, potatoes, onions, garlic, tomatoes, avocadoes, instant coffee, dried milk, olive oil, wine, beer and White Horse (!) are all easily available. You'll also find various bottled and canned items, tea bags are also available but they're horrible - we take our own! Camping is also easy but you cross into Argentina and Ruta Cuarenta, at your peril! IMO, December, January and February are the months to go! We met several cyclists who has gone on their own and who all said that they could have ridden with others every day, if they'd wished! We wished that we'd made more side trips...Laguna San Rafael looks very special!

We made the most of our 2 days in Santiago. We went shopping and dining and had a personal visit arranged by Mario, a young lawyer we'd met in Parc Pumalin, to La Moneda, whilst the President was in residence. We didn't even have to go through a metal detector! Try that at No. 10!

The Chilean government have sold Chile's rivers to foreign interests. Go to Patagonia soon, whilst it is still almost pristine, go whilst there are still wild rivers without dams. Go before pylons cover the mountains; go whilst there is still ripio!


Confluence on the Rio Baker


Heading towards Cerro Castillo again!


Banks of Lago General Carrera


A side trip on Chiloe.


Leaving Cerro Castillo behind.


Leaving Chile towards Paso Roballo


In Argentina, heading towards RN40


Pink Rock on RN40


RN40 100Km South of Perito Moreno - can you sense the wind?

This huge poster certainly caught my attention!

Back in Blighty - April 2013.

Fiona and I arrived home just in time for Easter. We were both fitter than we've been for years. Although we'd not climbed any big mountains, the steep gradients and tough surfaces of the Careterra demand that you're tough and fit, although, if like us you're simply very determined - they will eventually make you tough and fit!
We slotted back into Audax rides and we took our Thorn Team Mercuries round the Dorset coast 200, on a bitterly cold day.
We rode several more 200Km events.
We rode Graham Brodie's Devon Dirt on our Thorn Sterling MTBs...they were as reliable and easy to ride as ever.


Fiona's Other Mercury

I swapped Fiona's components from her other Mercury onto one of the **new Gunmetal frames,** along with the superb MERVC 853c forks and top quality 35c tyres. It looks a treat, as you can see. I have a red one, with identical spec, which I was lucky enough to get painted especially for me in Taiwan.
These bikes are superb, comfortable, sure footed, engaging to ride and certainly quick enough for long distance cycling.
The spec for these bikes could be called "Mercury LeJog spec". They will carry sufficient kit and tools for a 3 week B&B or hostel tour, with the minimum of civvy clothes, in small panniers and a saddle bag at the back. They are, in my opinion, also ideal for ultra hilly Audax rides on poorly surfaced roads in the worst of weather - or of course - riding to work!
With a Mercury in such a spec and my expedition bike, Hector, I feel that I have the perfect bike for any touring, anywhere on the planet.

Fiona currently thinks that 200Km is as far as she ever wants to plan to ride in a day and that is her new personal limit.
I entered the Audax National 400 on my Red Mercury. I was interested to see if I could still ride 250 miles in 24 hours one last time, I felt fit enough and had the motivation but I was concerned that I might have difficulty navigating at night.
The route sheet arrived on the Monday before the Saturday of the event too late to survey the route. 150 miles into the event and the route sheet was a shambles! There were lines missing from the instructions and without a GPS it was impossible for me to navigate. I got lost completely at night in dense fog, somewhere in the steep twisty lanes around Badminton. I racked up many extra miles, riding in ever increasing circles, trying to find something which matched the route sheet. Once I realised I was going to be out of time, my motivation disappeared and tiredness took its place. I rang Fiona and she said she'd rescue me and asked me to send her a glympse, so that she could track me, whilst I cycled on, to keep warm. (What a great App!) .
I tried to take comfort in the fact that I'd covered 220 miles in 21 hours but I still felt I'd failed. I wish that this was the low point of 2013 for me but sadly this was not to be.
Tragedy struck, on 26 June. Nick, my younger brother was killed on his motorcycle, whilst apparently riding carefully and within the speed limit. This has knocked me sideways, as well as taking up all my time. I'm just getting back to cycling again, as I write this in late July.
We've the Exmoor Explorer to look forward to in early August and we plan to ride as many big Cols as we can in the French and Italian Alps in September on our new Mercuries.

I now have my ideal stable of bikes, a phenomenal pair of touring bikes, a perfect every day bike, a truly superb tandem, a fantastic mountain bike and a fairly lightweight bike for Audax and summer use. Each of these machines is equipped with "straight bars" and a Rohloff hub

I have become so used to using the hub, that "being able to change gear without pedaling" has become an unconscious and integral part of my cycling technique...I really have no wish to use (or maintain!) derailleur gears ever again.

Andy Blance Jul 2013

Here's our new favourite bar set up for fast touring:- Ergon GP5L grips, with integral but independently adjustable, bar ends - mounted on Thorn Flat Track bars, which have been cut to 530mm. Who'd want drops?

My personal recommendation for tools for touring with Thorn Rohloff equipped bikes...*Andy Blance Oct 2012*

Thorn tool as supplied with bike (adjusts eccentric and removes pedals. With S&S bikes the tool supplied also incorporates the coupling tool)
2mm Allen Key. For securing cables into bayonet or pulley wheel.
2.5mm AK (Only required if you have the old triangular shifter)
3mm AK
4mm AK
5mm AK

Sliding T bar for ¼" sockets...a good quality item will last a lifetime.
8mm socket
Adaptor for bits
Torx TX 20 bit
6mm AK bit
8mm AK bit (Only required if you have square taper cranks with 8mm socket-head nuts. Make this from short section of 8mm AK and use with 8mm socket.)
Various screwdriver bits (flat and X head)

Chain tool
Spoke key...IMPORTANT...**buy the absolute best quality you can find, or you will do more harm than good!**
Lightweight slip-jaw pliers.
Triangular needle file.

Spare tube
Puncture repair kit inc talc or French chalk
Tyre levers
Pump
Pressure gauge...not a digital one...it doesn't need to be accurate but it does need to be consistent.

For extended touring
Tools to remove or tighten crank.
Spare brake pads
Rohloff sprocket removal tool 8501 and Spare sprocket.
Grease
Chain lube
Chain links
Spare Chain and quick links - necessary for KMC Rohloff chain.
Spare spoke nipples and Spare spokes
Rapid Araldite
Super glue
Soft garden wire
Small sharp blade.
Scissors
Canvas needle and waxed thread.
Spare screws, including a chain ring bolt.
120mm long section of lightweight tyre, with bead removed and tread sanded smooth. This can be used to mend a split tyre.
Spare gear cables, already cut to correct length, with ends silvered, to prevent fraying.
Oil change kit 8410...if you're lucky, you may need several!

For internal gear cables only...e.g. The RAVEN, RT and RST
One of the following should be taken - depending on user ability:-
Spare hub cables 8271. I'd take 2 sets in case I messed one up.
Or Easy cable set 8573 (only for hubs after serial 25300)
or Quick change axle ring 8272.

You should also consider whether you need:
Avid cable operated rear disc brake requires Torx TX 25 bit.
A roll of US$ one dollar bills...almost everyone will accept these.
A dummy wallet for muggers, with pre-stopped credit cards and lots of high denomination (but low value) bills, in various currencies - a friend's hot tip - along with the US$1000 dollar bill in the seat post! Fiona and I don't take either...we strenuously avoid travelling to any places where we may need them!

PART 2 - More Technical

Known problems with Rohloff hubs.

As mentioned earlier in this article, there has never been a case of a Rohloff hub's internals failing…no one has ever been stuck anywhere with a broken hub! This does not mean that nobody has ever had any problems with the hub…it just means exactly what it says…nobody has (to my knowledge…and I have scoured the internet searching for examples) ever been stuck anywhere, with a hub that *could* not be ridden.
Actually the reported problems, with the hub have been very few. For some people the noise of the hubs has been an insurmountable problem for them. Having ridden exclusively Rohloff equipped bikes for 8 years, Fiona and I know that, the more they are used, the quieter they get…all of ours have very quickly become silent in gears 8-14. We can still hear their lower gears (particularly seventh) whirring away.
We understand why new owners may try to avoid seventh gear but, having ridden for miles in 7th gear, unaware of the noise, whilst cycling into winds so strong that we could not make ourselves heard...even when shouting to each other and having now climbed for literally thousands of kilometers, in the lowest gears, with full camping kit, Fiona and I are both totally convinced that the "seventh gear noise" is only noise…not increased friction!

OIL LEAKS.

Modern motor vehicle gearboxes **run in an oil bath, they are almost invariably oil tight...thanks to the excellent seals. The losses, due to friction in these seals, are considerable but, hey, there is always more power available than we need and we just burn a bit more fuel without realising!**

With the Rohloff hub**, the first thing to understand is that the internals are not supposed to run in an "oil bath" in the strict sense of the term. The seals required, to prevent any light oil from leaking, if the hub was filled with oil, would cause too much friction to be acceptable to most human engines, which produce around 300w. It would be more accurate to say that "the internals run with oil-coated surfaces, in an environment, which is sealed from outside contamination."**

The internals of the Rohloff hub become coated with oil. It takes 7ml of oil to coat all the surfaces. If you put 25ml of oil into a brand new (un-lubricated) hub, ran it for 3 minutes and then immediately tried to drain the hub, you would only be able to drain out 18ml of oil.

When you change the oil, if you put the 25ml of oil, that Rohloff suggest, into the hub there will still be 7ml of oil adhering to the internals...which is 32ml in total. 25ml of this oil will leak out slowly, as an oil mist and when you come to perform the next oil change in a year, or in 5000Km, there will be very little excess oil left in the hub. There will always be 7ml adhering to the internals.

Best practice for oil changes.

After you have rinsed the hub with 25ml of flushing oil and drained it thoroughly, add only 8ml of oil,...you will then have 15ml of oil in the hub. 8ml of it will leak out much more slowly, as an oil mist.
You will still have very little excess oil in the hub, when you perform the next oil change but your dropouts will not be as messy.

Rohloff have endorsed the above procedure...in fact their service manager suggested it to me! Rohloff have confirmed that adding only 8ml of oil after draining the flushing oil will cause no problems...the only downside being that the hub will run slightly more noisily, than it would with 25ml of oil, to dampen the sound.

I double flush our (my and Fiona's) hubs, when I perform an oil change. I use half the rinsing oil, run the hub, drain it and then use the other half of the rinsing oil and drain that too, before adding 8ml of oil of Rohloff.
Note that the rinsing oil is actually very low viscosity oil and that you'd run the hub entirely on this, if you cycled, in very cold conditions.

Occasionally we have reports of bigger oil leaks from the hubs following air travel. The hubs breathe through a hole into the hollow axle and the sometimes dramatic changes in pressure can cause some oil to be forced through into the hollow axle, from where it will find its own way out.

It should be noted that, even if you deliberately drained all the oil out of the hub, there would still be sufficient oil adhering to the internal parts to prevent damage, until it was time for the next oil change!

Slipping Gears

Internet reports of slipping gears can often be traced to using the chain tensioner; everything that I have reported about the hub has been based on me using the OEM version, in a frame with vertical dropouts and an eccentric bottom bracket. There are alternative methods of building a frame for a Rohloff hub…obviously I believe that my solution is the best but there really is no sense in using the chain tensioner or belt drive.
Very occasionally, a new hub rapidly becomes difficult to change between 3 and 4 and/or 10 and 11, even more occasionally, this can be accompanied by slipping in these gears, sometimes a small foreign particle is the culprit, it can be flushed out and the hub's oil replaced, but usually the wheel has to go back to Rohloff; who return the wheel inside one week, after they have re-shimmed it. The problem has never been reported to arise a second time. As this malfunction has almost never been reported on anything other than very low mileage hubs, it shows that there must have been an error, in deciding which shims are required, when the hub is assembled, which can't be detected until the hub is built into a wheel and comes under operational load.

We have now supplied many 1000's of machines with the Rohloff hub and we have had to return fewer than 1% of them! We advise you to purchase your bike at least a couple of months before a grand adventure, just in case you are that 1 in 100! (Please also take into account that the lead time for our bikes can vary throughout the year).

Sprocket Removal

There have been reported cases of bike shops damaging Rohloff hubs, when attempting to reverse the sprocket, either through not having the correct tool or because they have not followed the correct procedure.

Take time to think through what you, or a bike shop, are going to do - it is really simple - you are preventing the sprocket carrier, which is part of hub's internal mechanism, from rotating with the confusingly named "sprocket removal" tool.
This tool must be securely attached to the hub using the QR skewer, to ensure that the pegs on the tool remain located in the slots of the sprocket carrier - when force is applied.
The sprocket removal tool then needs to be held immobile in a vice, or in the jaws of a large (adjustable) spanner.
The sprocket carrier can't turn, and it's relatively easy to remove the sprocket, using a chain whip, by applying force in the opposite direction, to the force applied to it, by the bike's chain - when cycling.

WARNING!

If you turn the sprocket the wrong way, you will simply make it tighter and more difficult to remove. If a mechanic adds a lever to the chain whip, whilst attempting to turn it the wrong way, it is possible to strip the thread on the sprocket carrier. The sprocket carrier can NOT be replaced without a total strip down to component parts...in practice, this means a complete new internal assembly.

Disc rear brake.

Specific rotors are required for the Rohloff hub, these use 4 x M8 x 0.75 bolts (chain ring bolts). The 8 screws used to secure the back plate of the hub to the main body can work loose with the application of a disc brake. We have had 2 Rohloff specific rotors made for us, we have the 160mm rotor and the 203mm ventilated rotor...which we only recommend for tandems. I designed both of these rotors and, because they use 8 arms, it was possible to prevent every back plate screw from being obscured by the arms...thus it is possible, with our rotors, to check the tightness of these screws, without having to remove the wheel, the EX box or the rotor.

Sprocket and chain wear is minimal with Rohloff.

Very long trips can be undertaken, without the need for sprocket reversal. If you are planning to undertake journeys where you feel that you may have to change or reverse the sprocket…make certain that you take a genuine Rohloff sprocket removal tool and the relevant page of the (excellent) Rohloff manual.
Fiona and I have covered 15,000Km on our sprockets and there is still no need to replace them. I must stress that "keeping the chain clean" is the only maintenance that I undertake on our trips. I do this by firstly turning the bikes upside down and removing as much muck as possible from the chain, sprocket and chain ring, with a bit of stick. Then I apply lots of chain lube and rotate the cranks. Then I run the chain through a bit of rag and remove as much muck as I can, then I apply a little more chain lube…job done!
With our THORN bikes, the above procedure is really easy because the chains don't have a chain tensioner, therefore the chain doesn't derail, as it would if you had a chain tensioner or a derailleur equipped bike! I use dry lube in dry climates...as this doesn't attract dust. I use wet lube wherever necessary...this adheres to the chain better but does attract dust. I never ever use petroleum based products for cleaning our chains.
Whilst it is possible to continue to run the chain and sprocket until the teeth are almost non existent...you would find it difficult to remove the sprocket...without teeth for the chain whip to locate into!
If you try and fit a new chain to an old sprocket, you will achieve little, the old sprocket will wear the new chain to the same state as the old one very rapidly...and it will run very roughly until it achieves this!
A new sprocket is also worn rapidly by an old chain.
It is possible to use a succession of (cheap) chains and throw them away before they get very worn. This is cost effective if your time is limited and compared with running anything with an engine, it is still an environmentally friendly practice...although not very practical for long trips!

BELT DRIVE

We get several enquiries every month regarding belt drive and, as the designer of the complete range of Thorn bikes; I would like to say quite clearly that my number one priority is to design bikes for a very long and easy service life. Most bicycles appear to cover very few miles each year; whereas our bikes seem to have always sold to customers who cover great annual distances. I see such a large percentage of Thorn bikes being ridden, compared to the very small number of Thorn bikes actually sold!
I don't believe that belt drive transmissions actually deliver the high mileage, easy maintenance solution that they appear to offer. Worse than that, the modification to the rear triangle, in order to be able to fit the belt, compromises the service life of the frame.
Some of the "solutions" I have seen to allow the fitting of a belt have been unbelievably stupid and would, beyond doubt, result in early frame failure.
I question the fundamental "sense" in having belt drive. Many sources claim that a belt is less efficient than chain drive. A belt is much less reliable and more easily damaged. The cam chain, in a Mercedes engine is generally agreed to have a service life in excess of 500,000 miles; whilst a cam belt, used by almost every other manufacturer, has a service life of 60,000 miles. Cam belts are sealed from the elements…bicycle transmissions are not.
If a small stone lands on a chain, it will fall off before it hits the sprocket, stones small enough to become lodged in the chain will be crushed. Belts are wide; larger stones land on them and don't fall off...these stones jam, derail or damage the belt. All of this is common knowledge in the motorcycle industry and no one has gone down this route for an off road motorcycle.
The belts have already needed to be redesigned, with a central groove, to allow mud to be squished out of it more easily and to hide poor belt alignment and/or deflection on weak frames…will this modification work?
The belt may be lighter than a conventional chain and the aluminum toothed rear pulley is also light but it has a very short service life.
The new grooved belts are run on stainless steel toothed rear pulleys, these are much heavier than a sprocket for a chain.
Gates have stated that the life expectancy of the belt is, "similar to that of a high quality conventional transmission"
I have recently learned from Rohloff that 4 specialist tools may be required to remove the rear pulley for the toothed belt. These tools are not only heavy...owning all 4 would be very expensive! This fact makes belt drive a non-starter for long trips, because you have almost no hope of finding anyone with these specific tools.

Removing a sprocket for chain drive is easy and involves simple tools...one of which is a chain whip. Chain whips can be found in every bicycle repair shop in the world.
We have no plans to purchase the tools required for removing a toothed belt rear pulley, so please don't think that we'll be able to help.
According to Rohloff, as things currently stand (Oct 2012) there is one retailer in the UK who has these tools. This retailer is not, at the time of writing, an official Gates approved Service Partner.

The natural relaxed shape of the belt is circular. The carbon fibres act as strong springs, which try and return to this natural shape, consequently the belt always has a tendency to pull away from the sprocket; whereas a chain naturally drops into the teeth. This means that when the belt is slack it skips over the teeth. Many frames have stays which flex, when the rider sits on the bike. This flex is more pronounced when bumps are hit or if the rider pushes hard. Flexing reduces the distance between the BB and the dropout and the belt can become sufficiently slack, on the lower run, to cause it to slip around the teeth, rather than drive them.
When the bike is examined, without the rider on board, the belt tension is seen to be sufficient.
Hubs have been returned to Rohloff, because they have lost drive, upon investigation, the fault has been shown to be the skipping belt.
The carbon fibres in the belts are also very easily broken if the belt is bent back on itself or twisted. When the fibres are damaged, the belt has no tensile strength and will suddenly snap.The belt is easily damaged when it falls off the ring or sprocket and becomes jammed between ring and BB.

As if these were not enough to put you off, I have more objections to the belt:-

How would you be able to vary the gear ratio? How many different sizes of sprocket and chainring are available? How many different lengths of belt are available. How much does it cost? How much does it cost to replace an entire transmission?
Surely the only valid reason for wanting belt drive would be to save energy/money/planetary resources? I firmly believe that belt drive will, in fact, waste all of these!
I know that belt drives won't be as problem free as other people may believe them to be and I am convinced that a small amount of maintenance is more cost effective than replacing a frame, which had been compromised by having a "gate" installed. Such a gate is normally positioned exactly where experienced frame builders know is the area most prone to failure on a bicycle…the RH rear dropout.

The reason this area is prone to failure is that chainstays ought to flex slightly, to aid comfort and to distribute stress; I can't see that adding a rigid section to this area can be anything other than detrimental and if the "gate" is not rigid, the screws securing it will fail sooner rather than later.
I have also seen the gate installed by securing the RH seat stay to the dropout with an M5 screw. Given that our expedition touring bikes use M6 screws for mounting the front and rear carriers, I can't see a single M5 screw lasting long.
I've seen mini couplings used in the middle of the RH seat stay - yes, that *may* be strong but it will be very rigid. I go to great lengths to provide flex in the seat stays of our Thorn bikes to enhance comfort - who would accept something which reduced it?

The "round the world record belt drive bike" apparently used 2 belts and it apparently the frame was also in need of replacement. How long should a bike frame last? Is once "around the world" long enough? I doubt if many of our customers would think so.
We have some customers who commute, who don't even consider themselves "cyclists", whose 3 year total mileage is considerably more than the "official" round the world record route.

Would replacing the frame frequently or, in Thorn's case, accepting a 12 month warranty...instead of our lifetime frame warranty, be an acceptable alternative to occasionally wearing gloves or getting dirty hands?

The belts are not as strong as chains and are fundamentally not suited to hard use.
Belts may be fine, if used exclusively for gentle commuting, on flat terrain…provided there is easy access to a specialist bike shop, with the appropriate tools.
The trouble is that almost everybody who could benefit from the belt and Rohloff, would be appalled at the prospect of owning a bike, which would cost between 10 and 30 times more than their current bike. In my experience, cyclists who are prepared to pay for a Rohloff equipped bike do not plan to use it exclusively for gentle commuting!

October 2012 update on belt drive.

Rohloff apply a sticker to every hub that they produce for Gates Carbon Drive sprocket. This sticker says:-
"ATTENTION POTENTIAL DANGER! The "Gates Carbon Drive" Owners Manual must be properly read and adhered to before use."

Rohloff say that they are unable to assist stranded tourists with removing the sprocket, unless the 4 tools, mentioned earlier have been carried, I believe that these weigh 6Kg and cost over £300. Of course the customer can make their way to one of the few International Gates Service Partners.

I'd like to repeat, according to Rohloff, as of Oct 2012, there is only one retailer in the UK who has these tools, but they are not to date an approved Gates Service Partner.

I've just (4/Oct/2012) downloaded the Gates Carbon Drive Owner's Manual and I'm appalled, it's worse than I thought.

On page 6 the manual say clearly that if the belt is crimped (I believe from the illustration that they mean folded), twisted, bent backwards, inverted or used as a wrench it is damaged and a damaged or mishandled belt can no longer be used.

On page 7 they say that mounting a belt with a lever or by rotating the cranks also damages the belt.

Even uncoiling a new belt incorrectly apparently damages it.

Assuming that you can fit the belt without damaging it, you may be forgiven for assuming that difficulties are behind you...not so.

On page 7 Gates show that if the belt slips off either of the pulleys it is dead; if you tread on it it's dead.
On page 31 they go on to say that if a stone, root, bit of wood or even clothing becomes caught in the belt and pulled between belt and sprocket it is damaged and must be replaced.
According to page 15, If the belt skips over the rear pulley, it is called ratcheting and a belt that has ratcheted must be replaced.
On page 5 they say that snow and ice could cause the belt to be pushed off the pulley and snow and ice could also cause ratcheting, either of which require a replacement belt.
Gates also tell you on page 5 to make sure that no components or objects can come into contact with the belt. Other bikes are cited as an example of such objects.

I have absolutely no plans to offer a belt drive option on Thorn bikes, our bikes are usually purchased because of our reputation for making a sound product, with an exceptionally long service life, which can be relied upon in remote places.
I believe that the objections to using belt drive are overwhelming and I foresee many Gates customers wishing to revert to chain drive - assuming that they can get the pulley removed!
The problem is then that they will have a frame which has been unnecessarily compromised, in order to fit such a fundamentally flawed system.

How do you feel about belt drive now?

Are 32 spokes enough?

Many people question whether 32 spokes are enough…especially on a tandem. We can report that 32 spokes are certainly enough…in a correctly built wheel…even for tandem use! Unfortunately we had several cases of spoke breakage on the tandems until we discovered the cause…incompatible rims! The flanges of the Rohloff hub are so large that, with most rims, the spokes tend to bend as they leave the nipple, eventually this causes them to break at the nipple…a type of failure which was unheard of…until it happened! We solved the problem at source...we now have rims drilled so that the spokes leave the rim in a perfectly straight line, since doing this, no more tandems have had broken spokes. If a wheel is strong enough for tandem use, it will survive any other kind of touring use. the odd broken spoke…broken spokes are very easily replaced in a Rohloff hub as the sprocket does not need to be removed to replace the spoke. I consider that this is an acceptable price to pay, for the performance benefits, of such rims, on this type of bike.
There have been a few isolated cases of the flange cracking at the spoke holes. Rohloff say that this is due to undetectable flaws, in the alloy billet, prior to manufacture. As of Aug 2011, Rohloff have made considerably more than 100,000 hubs, so the chance of this happening to you is very, very remote.

It must be stressed that in no case did either spoke breakage (which we have now cured) or flange breakage (which remains a remote possibility) prevent the riders from completing their holiday, or in the cases of cyclists on trips of indefinite duration, prevent them from carrying on their journey, until they could rendezvous with a new wheel, which we sent out to them, free of charge!

Aug 2011 spoke breakage update. **We had a rogue shipment of spokes from Sapim, which caused problems on a few wheels built in Spring 2011.**
We responded to these problems immediately and delivered our excellent after sales service promptly.

Rohloff have a fantastic after sales support service - second only to ours!

Talking to many hundreds of customers, over many years, it seems as if most peoples' biggest worry is *"what happens if it goes wrong, in the middle of nowhere?"* We don't think that there is much likelihood of your Rohloff hub ever letting you down…it is much, much more likely that you will have an insurmountable problem, on tour, if you use derailleur gears…especially as there are so many compatibility issues with derailleur hubs, mechs (front and rear), cassettes, chains and shifters.

We are so convinced that your Rohloff hub is unlikely to ever let you down, that we make you this promise...

If you experience an insurmountable problem with your Rohloff hub, which prevents completion of your tour, contact us immediately and we will act promptly.
If you are in a remote area, we will send you a new wheel, we will send this entirely at our expense, to the closest settlement served by an international courier (DHL, UPS etc.).
If you are closer to home, we will collect your wheel from you, again at our expense, we will repair (or replace it) and return it to you, free of charge, within 7 working days for UK customers and within 14 working days for overseas customers.

This Guarantee specifically does not cover cable breakages… cables should be replaced before they break, as part of a responsible owner's personal preventative maintenance programme and, in any case, a broken cable does not leave you stranded. This Guarantee is only applicable to customers who purchase complete bikes and is not transferable but it is applicable for the lifetime of the original owner…it is also retrospective, inasmuch as it applies to all original owners of Thorn Rohloff equipped bikes, whenever they purchased their bikes.

How can we promise to supply a new wheel, regardless of cost, for as long as you live? We can promise it because we know that there will be very few occasions where such action will be necessary. We are simply acting as an insurance company…the risk is minimal, so the premium is very small, therefore we consider that you have already paid for a lifetime's insurance.

Please note that the internal gear wire will snap eventually. changing gear with the twist grip then becomes impossible. In practice the rider's instinct is to twist the shifter when the cable snaps, so depending upon which cable snapped, the hub is (usually) in first gear or fourteenth. Removing the axle ring assembly (good quality Torx Tx20 driver and 8mm spanner) will allow the hub to be put into whatever gear is required and **the cycle can still be ridden.**

The replacement of the internal gear wire in a Rohloff hub is not particularly tricky, once the very clear instructions have been read and understood.

Having said that, I would much rather change the cable at home (when I am under no pressure, in the dry, under good lighting conditions, with my reading glasses, cable cutters and cup of tea available) than change it halfway up a mountain in a storm during the night!

But prevention is much better than cure, so why not consider maintaining the cable in the same way that you would the cam belt in your car? That is, change it at regular intervals, these intervals being shorter than the service life of the component.

I believe that, because our cycles have such a perfect line of entry of the cable into the hub, the cable should fail at the upper end of Rohloff's 10,000-30,000Km projected cable service life... so 20,000Km service intervals should see very few, if any, of our customers with broken cables.

To those poor, unfortunate individuals who always seem to have bad luck with mechanical things, I would suggest that, even if you changed it at 10,000km (i.e. every other oil change) it would require but a fraction of your time spent in maintenance compared to a derailleur system.

For the global tourist, the extremely cautious and the phenomenally unlucky, there are two alternative strategies to consider;

[1] Carry a Rohloff hub cable easy set (the name of a sub assembly which includes the cables and pulley) and a good quality Tx20 Torx driver; this allows the replacement of the cables in less time than it would take to repair a puncture and pump up a tyre! You then have 10,000Km minimum to find a suitable time and place to perfect the technique to replace the 0.9mm cable in your old pulley assembly before you could possibly need it again.

The Rohloff hub cable easy set (for hubs after serial 25300) is available from SJS Cycles (SJSC part No. 16460) it comes complete with cables installed and cut to precisely the correct length, rubber gaiters fitted and QR fittings attached.

[2] You could opt for the (more expensive and slightly heavier) version with the QR external cable box... this uses conventional 1.1mm gear cable and conventional (brake) outer casing all the way through and in the (unlikely) event of one of these breaking, disconnect the external box and a simple turn of an 8mm spanner will engage whichever gear you wish, enabling you to continue on to a suitable repair facility.

However, to function perfectly, this option really requires specific cable routing - which is only available on our Thorn Mercury, Thorn Nomad Mk2 (inc S+S version and the new X series Nomad frames), the Raven Twin tandems (but not the child back sizes) and the Thorn Raven **step through** frames S-T 420.

When used with a disc brake, the 8 x M4 Torx screws, which attach the back plate to the shell, must be regularly checked for tightness, if they work loose the hub will deposit its oil on the rotor, which will render the brake ineffective.

I've been unable to discover any other problems with the Speedhub, every part is available as a spare part and Rohloff have a philosophy which means that each improvement to the hub is retrofitable to earlier hubs.

What I like about the Speedhub.

I like the solid build of the Speedhub; it was originally built as an all-season MTB hub, for use in Northern Europe's extreme conditions... **it is well sealed, all the internals run in an "oil bath".**
I like the fact that the **'indexing of the gears' takes place inside the hub,** this means that the twist grip, although beautifully made to enable easy
replacement of the cables, is a low tech item - there is little to go wrong with it (unlike current derailleur shifters).
The twin-cable system means that there are **no return springs to fail,** either in the shifter or the hub.
I like the way that **the next gear (up or down) is only a simple twist of the shifter away...** none of that "changing up a chainring and down two
sprockets malarkey"
I love being able to change gear without pedaling, it is easy to quantify but very difficult to express how really incredibly useful this is, when cycling in the "real world"!
It is great not to have a derailleur hanging low down waiting to be knocked.
The smaller chainring and sprocket (and lack of rear derailleur) means that the chain is less likely to cover your leg in black muck.

I like the way Rohloff have engineered the sprocket to be double sided... wear it out and then turn it round and wear it out again, it is refreshing that, in today's throw away society, Rohloff have considered this to be a priority!
I like the way the my gears never 'jump' or slip... I feel really confident
pedaling, or changing gear, when out of the saddle! As with any gearbox, it is possible to occasionally select a "false neutral", I've done this fewer than a dozen times in over 80,000Km.
I like the absolute silence of pedaling it, in gears 8 to 14, once run in.
Over the years I have come to appreciate the total reliability that Fiona and I have experienced with the Speedhub.

Things I dislike about the Speedhub.

It would be too much to hope that there would be no dislikes but they are few.
I don't enjoy the noise in gears 7 to 1, especially the noise in gear 7... but I can easily live with it, because it is the noise of precision parts rotating and meshing at speed, the hub does get quieter with the miles and, because I have carefully considered my gearing, I am in gears 8 to14 most of the time!
2012 UPDATE. **Rohloff hubs are now significantly quieter than they used to be and seem to require little or no running in.**
I don't like the fact that you have to back off your pedaling power, particularly when changing between 7 & 8 and 8 & 7. If you do not back off between these gears, the hub will change into, and stay in, gear 14... until you do back off! This is a nuisance, but it is **only a nuisance** and not a danger and much easier to accommodate than the nuances of changing chain rings with a derailleur!
When using Rohloff after using derailleur gears, you will need to develop the appropriate muscle memory in your legs, to become truly adept at using the Rohloff.
Rohloff hubs change gear in under 100th of a second...derailleur gears take around half to one complete revolution. With Rohloff you must back off at the same instant as you change gear...with a derailleur your legs have got used to backing off a half to one second after you move the shifter...this is too long a delay to allow the Rohloff hub to change gear. You will get used to it in a relatively short time. With a new hub and a new user, it is beneficial to over exaggerate the backing off of power...this helps the new hub, which needs running in and it helps you to develop your muscle memory.

Over time I have become so used to using the hub, that I never experience any problems whatsoever, when changing gear...whatever the circumstances!
I am not obsessed with weight but, like most cyclists, I like things to be as light as possible; the hub doesn't weigh more than the items it replaces, but the frame needs some extra provision for the hub.
The fact that all the weight is at the rear of the bike makes it feel heavier than it actually is...when you pick the bike up, this is not noticeable, in any way, when riding the bike. To be fair to Rohloff, when you see a cut-away drawing and you see all those ball races, labyrinth seals, and needle bearings... when you see the quality of the machining, you realise they have done remarkably well to make it as light as it is!
I'm not going to cite the high cost as a negative feature because, looking at the quality of this product, it's actually an engineering bargain! And goodness only knows how many £££'s worth of shifters, cassettes, derailleur, chains, chain rings and rear hubs you would've needed to buy during the service life of the Rohloff Speedhub - however long that turns out to be!
Or how many jammed chains, slipped gears and messy hands you will avoid!
In short, the Rohloff Speedhub is German engineering at its absolute finest.
The internals are so overbuilt, that nobody yet knows its real-world service life!
Unlike derailleur systems, it continues to get better - as it gets older!

I'd also like to stress that neither Fiona, nor myself, have ever had any problem whatsoever with any of our Rohloff equipped bikes - and we've certainly put them to long and strenuous use!
Andy Blance, July 2013

WARNING!

ROHLOFF and THORN PROVIDE EXCELLENT CUSTOMER CARE BUT WE BOTH CONSIDER IT TO BE IRRESPONSIBLE TO UNDERTAKE AN EXTENDED TOUR, WITHOUT APPROPRIATE TOOLS and/or CRITICAL SPARES.
ROHLOFF and THORN WILL NO LONGER PROVIDE FREE REMOTE SUPPORT TO TOURISTS WHO DON'T HAVE THE FOLLOWING:-

2mm Allen key
2.5mm Allen key
3mm Allen key
5mm Allen key
8mm box spanner
15mm box spanner (for axle nuts where applicable no THORN ROHLOFF bike uses these)
Chain lubricant
Grease
Torx TX20 key
Oil change kit 8410
Sprocket tool 8501
Spare Chain
Spare Sprocket
Spare spokes
Complete shifter cables

For internal gear mechanism only;
one of the following should be taken - depending on user ability:-

Spare hub cables 8271
Or Easy cable set 8573 (only for hubs after serial 25300)
Or Quick change axle ring 8272.

If one, or more, of the above items are required for a repair and have not been carried - neither ROHLOFF nor THORN will be able to provide remote support - unless the customer agrees to pay, by PayPal, for these necessary spares or tools. Be warned, carriage could be very expensive!

STOP PRESS!

French engineer Gilles Berthoud has introduced a shifter which will fit on drop handlebars.
Gilles worked in collaboration with Rohloff, who give their qualified approval of the shifter.
Rohloff's concerns are the same as ours; due to the open cables, we don't believe that this shifter is the best option on an expedition bike.
We can see that it is a well thought through and superbly well made bit of kit, which we feel sure will give excellent service on a sports touring bike.
We've had our own 44cm wide drop bars made to compliment Gilles Berthoud's shifter. These have a very narrow centre swell to allow the bars to fit close to the stem, thus providing a comfortable length of straight bar. The centre swell is 25.4mm in diameter, we have the greatest stock of different length and different angle stems in this size.

The KMC Rohloff specific chain is now fitted to ALL THORN ROHLOFF bikes, it's the best chain you can get - it can be run for up to 1500 Km before requiring either tensioning, or re-tensioning.
It will last many times longer than any other chain.
In good conditions and if kept clean and properly lubricated, this chain ought to last 20,000+Km.

DISC BRAKES PLEASE NOTE:-

The tightness of the 8 Torx screws which secure the back plate to the hub shell, should be carefully and regularly checked. If these loosen sufficiently, a significant quantity of oil may be leaked onto the rotor, which is likely to make the brake useless.
Thorn rotors allow these screws to be checked, without removing the wheel from the frame, or removing the rotor.

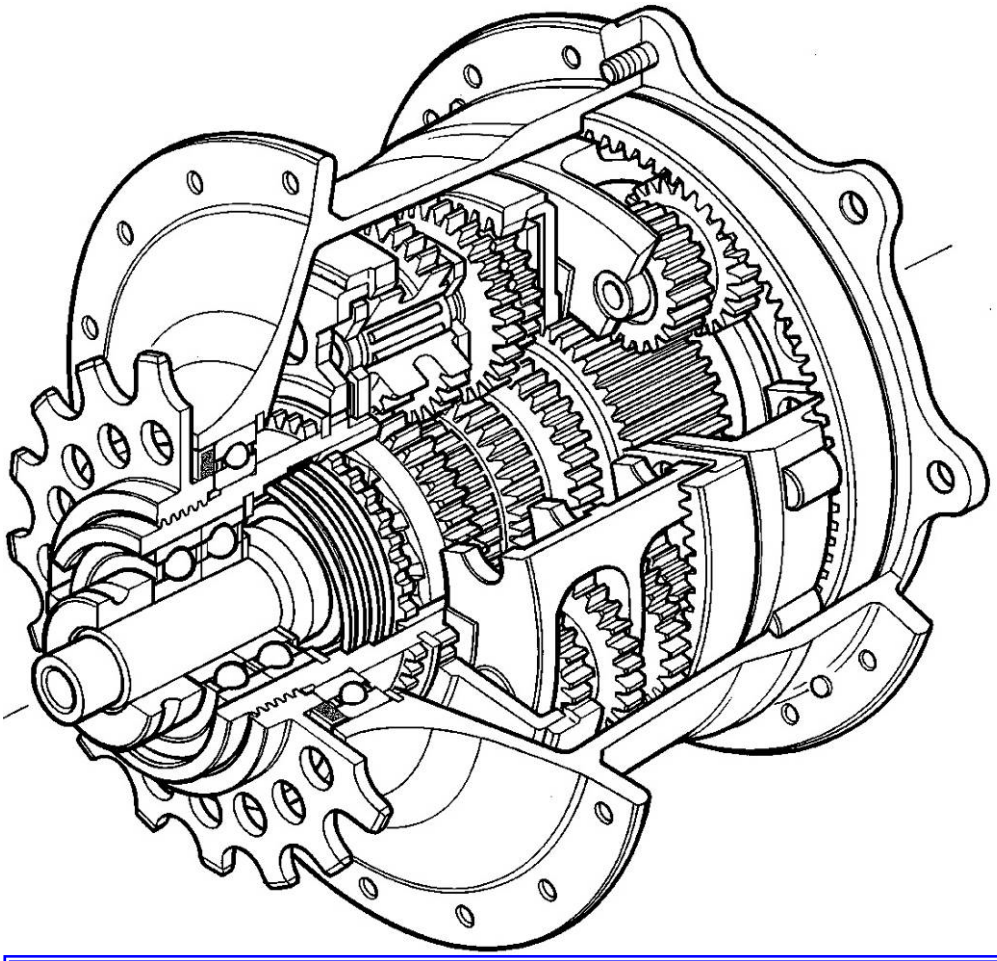
Why we recommend getting a complete bike rather than adding a hub to an existing machine.

One of the great joys of the Rohloff (apart from all the considerable benefits in operation, service and reliability) is that the not insignificant investment in one is repaid, over the years, by being able to squeeze every last bit of service life out of the transmission. **Please note that fitting the hub to a frame not designed specifically for it** (except in the case of a frame with exceptionally long horizontal dropouts) means that a chain tensioner will have to be used, the tensioner allows the chain to skip when things are only partly worn, or if you try adding a new chain to a part worn sprocket... just as a derailleur system does.

If you fit an aftermarket hub kit, you must also use a torque arm to resist the considerable force trying to rotate the hub in the frame. We have had our own stainless steel vertical dropouts made, which accept the bicycle manufacturers' version of the hub (OEM 1) which have a "mini torque arm" built into them.
The Rohloff cables run in continuous outer casing to the LHS of the hub, frames not carefully considered for Rohloff will need cable ties to secure these cables to the frame... this is neither as efficient nor as elegant as our totally thought out, Rohloff specific frames.

Frames, which use a portion of bare wire for gear runs, are a sure sign that the builder has no experience with Rohloff. These will cause you problems very quickly, as grit will be drawn into the cables, which will soon make for heavy shifting.

I don't know whether to laugh or cry, when I see some of the basic errors made on so-called "dream machines", which have been custom built, at great expense, for use with Rohloff hub - I've spent many years perfecting our bikes for Rohloff use and I've put this information into the public domain! I've yet to see such a machine, which could compare favorably with even our most basic Thorn Raven - and remember, our most basic Raven comes with an industry-leading warranty, backed up by our helpful, knowledgeable and enthusiastic team!



Please also note; **we allow you a "100 day, money back if, not delighted" trial period, with our Rohloff bikes… ...who else has confidence enough, in their product, to do that?**

Easy rear wheel removal with internal gear mech!

No tools required and takes seconds

Removal:

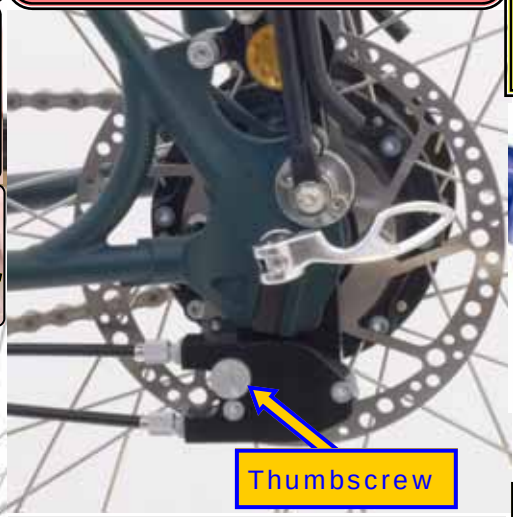
(1) Release the V brake pipe
(2) Quick-release the two Rohloff cables, simply by twisting them through 90 degrees
(3) Quick-release the skewer.
You may now easily remove the wheel.

Replacement:

To replace the wheel, reverse the process.
(4) Locate the chain on the sprocket
(5) Ensure that the mini anti-rotation torque arm fits into the deep slot on the LH dropout.
(6) Tighten the QR skewer
(7) Clip together the two Rohloff cables.

Easy rear wheel removal with external gear mech.

No Tools required and takes seconds



EX Hub Wheel Removal

(1) **Ensure that the shifter is in gear 14.**
(2) If the bike has V brakes, release the V brake pipe.
(3) Unscrew cable box thumbscrew and
(4) Remove the cable box.
(5) Quick release the skewer.
You may now easily remove the wheel.

Replacement:

To replace the wheel, reverse the process.
(6) Locate the chain on the sprocket
(7) Ensure that the mini anti-rotation torque arm fits into the deep slot on the LH dropout.
(8) Tighten the QR skewer
(9) Check that shifter still reads 14, replace cable box and tighten the thumbscrew.

TIP. **If you forget to engage gear 14 at the start, you can put the hub into gear 14 by rotating the hexagonal shaft, onto which the EX box seats, fully anti clockwise using an 8mm spanner.**

Important safety notice.

Ensure that you reinstall the V brake pipe.

Please read this notice!

Mini anti-rotation torque arm

Simple eccentric chain adjustment and perfect chain line!

WARNING!
Do not position the eccentric in this low position...the eccentric bolts will penetrate the thin eccentric shell and damage the bottom bracket

OK

NO!

Loosen eccentric screws completely

NOTE:- These views of the eccentric are from the RHS side of the bike, with the chainring removed for clarity. There is no need to remove the ring to perform this procedure.

Rotating clockwise tightens the chain.

Rotating anti-clockwise Loosens the chain.

Note that, in this position, maximum tension-adjustment has been reached and a link of chain must be removed, when the chain next becomes slack.

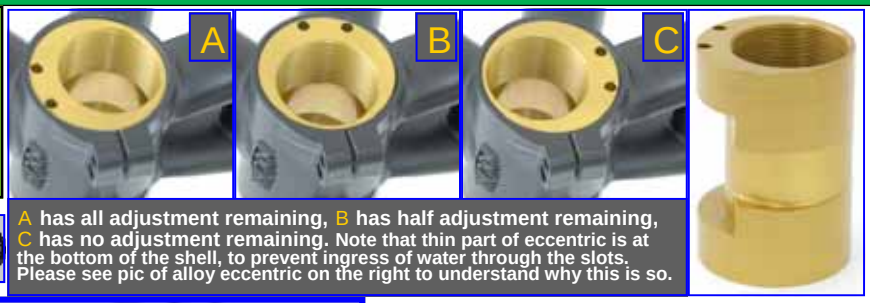
Tighten eccentric screws to a torque of between 10 and 17 Newton metres.

(This is about as tight as most people could get them with a short screwdriver)

When adjusting the chain, please remember to allow for the "tight" spot. Do not over tighten the chain. There is no need to constantly adjust chain tension...the chain is too slack only if there is a danger of it falling off the chain ring or sprocket.

"It might look complicated but of course I know exactly how it works...you just turn the shifter and you're in the gear you need!" *Andy Blance Dec 2007*

The new lightweight THORN stainless mini-eccentric.



A has all adjustment remaining, B has half adjustment remaining, C has no adjustment remaining. Note that thin part of eccentric is at the bottom of the shell, to prevent ingress of water through the slots. Please see pic of alloy eccentric on the right to understand why this is so.

I've designed a new mini eccentric for the Thorn Mercury. I wish to state clearly that there's no intention of offering this on any of the other models.

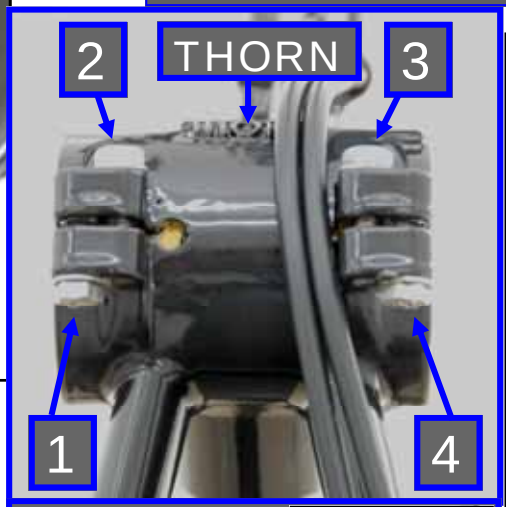
In order to actually save weight, the eccentric had to be smaller in diameter.

Being smaller in diameter means that it can only adjust a little more than half a link of chain. When no more adjustment can be made with the eccentric, a new chain must be fitted. By choosing one of the ideal chain ring and sprocket combinations, the service life of the chain is maximised.

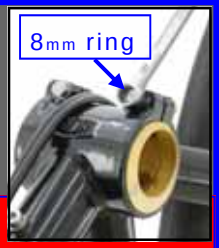
I believe that customers, who require a sports bike, will be prepared to replace the chain. Such cyclists will certainly find obtaining and fitting a replacement chain and servicing the mini eccentric, easier than the expedition cyclist. Servicing and preparing any bike, for an important event, ought to be normal practice.

The 4 x M5 screws need to be tightened and loosened in a particular sequence, please see diagram. As soon as each screw becomes tight, each screw must only be turned a sixth of a turn (60°) at a time until they are tight.

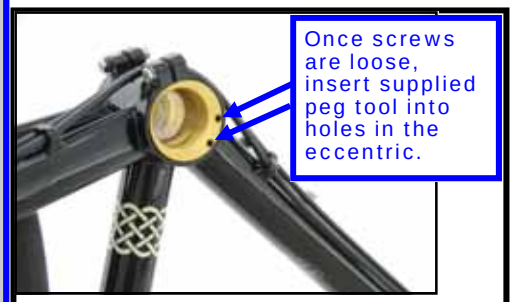
Experience has now (Aug 2013) shown that the mini EBB screws don't need to be very tight, to prevent the eccentric from turning.
5 Nm is more than sufficient and there is zero chance of shearing a greased M5 screw at this torque.



Tightening & loosening Sequence; 1, 3, 4, 2, 1, 3, 4, 2, etc.



Turn screws 60° turn at a time until fairly tight - the maximum torque of 5Nm is *usually* NOT necessary.



Rotate the eccentric to tighten or loosen the chain.

Then re-tighten screws in sequence to secure the eccentric.

The screws must be removed at least every year and fresh copper slip must be applied to the threads. If the bike is used in harsh conditions, such as on salted roads or beaches, re-lubrication, with copper slip, must be more frequent.
The whole procedure, whilst not in itself difficult, is certainly less simple with this new eccentric, than it is with our *crude but effective* eccentric, which we use on all of our other Rohloff specific models.
The crude but effective eccentric will throw a whole link of chain and it may be used with any combination of chain ring and sprocket with impunity. I'm a great believer in horses for courses and having something fool proof, when you're in the middle of nowhere, is very reassuring!

If your mini-eccentric is difficult, or becomes difficult, to rotate - here's our quick, easy solution.

Remove all **the eccentric's screws (not shown).**
Refit the 2 outer screws as shown - apply only 3 turns to start with.
Insert a thin coin in each slot as shown.
Tighten both screws evenly - 4Nm is sufficient.
The eccentric should now turn freely.

Adjust the chain tension, as shown above, when the chain tension is correct, remove the screws and re-install, observing tightening sequence shown above.

Rohloff gear ratios
and comparison with derailleur gear ratios

On pages 31 and 32 you'll see gear charts for a Rohloff hub with various chain ring and sprocket combinations. The 700c charts (on page 31) show the only sensible combinations which will work with the mini eccentric BB used on the new Mercury.
On page 24 you will see a complete gear chart for 26" wheels.

The Rohloff hub has an overall range of 526%. That is the bottom gear gives more than 5 times the leverage of the top gear.
Or think of it like this, at the same speed you have to pedal more than 5 times faster in bottom gear than you do in top.
11th gear is 1:1 direct drive with a Rohloff hub
The old "Ordinary" bikes (Penny Farthings) used to have the cranks connected to the front wheel, without gearing...one rotation of the cranks was one revolution of the wheel. Riders use to talk of the size of the wheels in inches (taller riders could pedal a bigger wheel). The single geared safety bicycle was invented when chain technology allowed a chain ring to drive a sprocket. The safety aspect was that the rider was not way up in the air and now had brakes which worked. Riders used to calculate the gearing and refer to it as if was the actual size of a wheel. i.e. a 2:1 gear ratio on a 26" wheel produced the same gear as a 52" Penny Farthing. In much of the native English speaking world, we use this system today.

Rohloff will not give a warranty on the hubs, when a gear, with too low an input ratio is used.
For riders under 100Kg in weight they now say that an input ratio of 2.1:1 is fine.
When riders weigh over 100Kg or for use on a tandem, Rohloff now say that an input ratio lower than 2.5:1 must not be used.

Rohloff have put a figure on the maximum pedalling force with a 170mm crank of 150Kg.

It is the input ratio and not the actual gear ratios produced which is critical.

In our opinion 40 x 17 (or 45 x 19, which is almost identical) is a good choice of gear ratio for general touring. Some may say that it is too low but if you're fit enough, or can get fit enough, to pedal at a knee saving 100rpm and if you can keep this up for one hour you will travel 42.99 Km in that hour on 26" wheels! You may feel as I do, that you could benefit from significantly lower gears, especially if you are my age, or older and you feel that you'll never develop the kind of pedalling force of a world class athlete (!!!) I'd need to stand on the saddle and jump onto a pedal in order to achieve 150Kg of force!
Rohloff now (Jan 2013) allow lower gears than they used to and I'd be happier, when touring, to use 40 x 19.

We've had some 19t sprockets made for us. These have a longer service life - there are more teeth for a start but the greatest benefit is that, because the sprocket is larger in diameter, the chain doesn't have perform such a tight bend. This means that there's less opportunity for grit to get behind the side plates. The chain lasts significantly longer and therefore there is less wear on the sprocket.

I have shown some derailleur gear set ups at the bottom of this page, so that you can compare the ratios available with derailleur gears with those available with Rohloff. If you are moving from derailleur gears to Rohloff it is most important, when deciding which chainring and which sprocket will be most suitable for your intended application, that you confirm that the cassette and chain ring combination that you think you have is actually the one that you do have. It is also a good idea, if you are perhaps contemplating your first long, self supported tour, to consider that you will need gears which are much lower than anything you have previously required. Having such low gears will almost certainly mean that you do not have gears high enough to pedal, when you are descending long or steep hills. This shouldn't matter, you'll probably be glad of the rest, as you freewheel along at speed. Not having low enough gears, when you are tired and have to ride up a long hill, when you still have some distance to travel, really does matter.
If you are looking at a sporty bike with Rohloff gears, to replace an existing sporty bike, it is sensible to make sure that your top gear **is** as high as the one you are currently happy with...achieving this should be no problem whatsoever and you are almost certain to pick up some extra low gears, as a bonus.

Some typical modern derailleur set ups

A	22	32	44
11	X	75.6	104.0
13	X	64.0	88.0
15	38.1	55.5	76.3
17	33.6	48.9	67.3
20	28.6	41.6	57.2
23	24.9	36.2	49.7
26	22.0	32.0	44.0
30	19.1	27.7	X
34	16.8	24.5	X

A typical modern MTB derailleur set up and also frequently recommended on 26" expedition touring bikes
The X combinations must not be used and the combinations in small print should be avoided.

B	26	36	48
11	X	85.0	113.4
12	X	78.0	104.0
14	48.3	66.9	89.1
16	42.3	58.5	78.0
18	37.6	52	69.3
21	32.2	44.6	59.4
24	28.2	39.0	52.0
28	24.1	33.4	X
32	21.1	29.3	X

Fairly common but, in our opinion, too high gear ratios used on modern fast 700c touring bikes
The X combinations must not be used and the combinations in small print should be avoided.

C	30	42	52
11	X	99.3	122.9
12	X	91.0	112.7
14	55.7	78.0	96.6
16	48.8	68.3	84.5
18	43.3	60.7	75.1
21	37.1	52.0	64.4
24	32.5	45.5	56.3
28	27.9	39.0	X
32	24.4	34.1	X

An all too frequently seen combination, once the owner realises that racing gearing needs racing legs to go up steep hills and the tight racing cassette is replaced with an MTB cassette.
The X combinations must not be used and the combinations in small print should be avoided.

D	34	50
12	X	112.5
13	X	103.8
14	65.6	96.4
15	61.2	90.0
17	54.0	79.4
19	48.3	71.1
21	43.7	64.3
23	39.9	58.7
25	36.7	X
28	32.8	X

Many modern sportif bikes use this typical compact double set up...you get lovely close ratio gearing but you certainly need to be very fit for hilly events!
The X combinations must not be used and the combinations in small print should be avoided.

Gear	1	2	3	4	5	6	7	8	9	10	11	12	13	14
41 x 19	16.2	18.3	21.0	23.8	27.0	30.7	35.0	39.7	45.1	51.3	58.2	66.1	75.2	85.4
39 x 17	17.3	19.6	22.3	25.4	28.7	32.8	37.2	42.2	48.0	54.6	61.9	70.4	80.0	90.9
45 x 19	17.8	20.1	23.4	26.1	29.6	33.7	38.4	43.6	49.5	56.3	63.9	72.5	82.5	93.7
43 x 17	19.1	21.5	24.5	27.9	31.7	35.8	40.8	46.5	52.8	59.8	68.3	77.4	88.1	100.2
49 x 19	19.4	21.9	25.1	28.4	32.2	36.7	41.8	47.4	53.9	61.3	69.6	79.0	89.9	102.0
47 x 17	20.8	23.6	26.9	30.5	34.6	39.4	44.8	50.9	57.7	65.7	74.6	84.0	96.4	109.4
50 x 17	22.2	25.1	28.6	32.5	36.8	41.9	47.6	54.2	615	70.0	79.4	90.1	102.6	116.5
51 x 16	24.0	27.2	31.0	35.2	40.0	45.5	51.7	58.7	66.6	75.9	86.1	97.7	111.2	126.3

Gear Chart for 700 x 28c

Gear	1	2	3	4	5	6	7	8	9	10	11	12	13	14
41 x 19	16.9	19.1	21.8	24.7	28.0	31.9	36.3	41.2	46.8	53.2	60.4	68.6	78.1	88.7
39 x 17	17.9	20.3	23.1	26.3	29.8	33.9	38.6	43.8	49.7	56.6	64.2	72.9	83.0	94.3
45 x 19	18.5	21.0	23.9	27.1	30.8	35.0	39.8	45.2	51.3	58.4	66.3	75.3	85.7	97.3
43 x 17	19.8	22.5	25.5	29.0	33.0	37.5	42.6	48.3	54.9	62.4	70.8	80.5	90.7	103.9
49 x 19	20.1	22.8	26.0	29.5	33.5	38.1	43.3	49.2	55.9	63.6	72.2	82.0	93.3	106.0
47 x 17	21.6	25.0	27.8	31.7	35.9	40.9	46.5	52.8	60.0	68.3	77.4	88.1	100.1	113.6
*50 x 17	23.0	26.0	29.6	33.7	38.2	43.5	49.4	56.2	63.7	72.6	82.4	93.5	106.4	120.8
*51 x 16	24.9	28.2	32.1	36.5	41.4	47.1	53.6	60.9	69.1	78.6	89.3	101.3	115.3	130.9

Gear Chart for 700 x 40c

All the gear combinations shown are OK for use on solo bikes, by riders who weigh less than 100Kg.
The Bright yellow highlighted Gear options are OK for use by riders over 100Kg, or for use on tandems.
NOTE:- we don't recommend 700c wheels for cyclists over 100Kg and we don't make tandems with 700c wheels either!
The green columns show 8th gear.
The pink column shows 11th gear which is direct drive

* With the exception of 50 x 17 and 51 x 16, which use 45% of available adjustment when new, the combinations of chain ring and sprocket shown on this page will all work perfectly with the 700c Mercury and will provide maximum possible service life of the chain.

Number of teeth on chainring x number of teeth on the sprocket	Gear	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	40 x 19	15.3	17.3	19.7	22.4	25.4	28.9	32.8	37.3	42.4	48.2	54.7	62.1	70.7	80.3
	41 x 19	15.7	17.7	20.2	22.9	26.0	29.6	33.7	38.3	43.4	49.4	56.1	63.7	72.5	82.3
	42 x 19	16.1	18.2	20.7	23.5	26.7	30.3	34.5	39.2	44.5	50.6	57.5	65.2	74.3	84.3
	43 x 19	16.5	18.6	21.2	24.1	27.3	31.1	35.3	40.1	45.5	51.8	58.8	66.8	76.0	86.3
	44 x 19	16.9	19.0	21.7	24.6	28.0	31.8	36.1	41.0	46.6	53.0	60.2	68.3	77.8	88.3
	45 x 19	17.2	19.5	22.2	25.2	28.6	32.5	36.9	42.0	47.7	54.3	61.6	69.9	79.6	90.3
	46 x 19	17.6	19.9	22.7	25.7	29.2	33.2	37.8	42.9	48.7	55.5	62.9	71.4	81.3	92.3
	47 x 19	18.0	20.2	23.2	26.3	29.8	34.0	38.6	43.9	49.8	56.7	64.3	73.0	83.1	94.4
	48 x 19	18.4	20.8	23.6	26.9	30.5	34.7	39.4	44.7	50.8	57.9	65.7	74.6	84.9	96.4
	36 x 17	15.4	17.4	19.8	22.5	25.5	29.1	33.0	37.6	42.6	48.5	55.1	62.5	71.1	80.8
	38 x 17	16.2	18.4	20.9	23.8	27.0	30.7	34.9	39.6	45.0	51.2	58.1	66.0	75.1	85.3
	39 x 17	16.6	18.9	21.5	24.4	27.7	31.5	35.8	40.6	46.2	52.5	59.6	67.7	77.1	87.5
	40 x 17	17.1	19.4	22.0	25.1	28.4	32.3	36.7	41.7	47.4	53.9	61.2	69.5	79.1	89.8
	41 x 17	17.5	19.9	22.6	25.7	29.1	33.1	37.7	42.7	48.6	55.2	62.7	71.2	81.0	92.0
	42 x 17	17.9	20.3	23.1	26.3	29.8	33.9	38.6	43.8	49.7	56.6	64.2	72.9	83.0	94.3
	43 x 17	18.3	20.8	23.7	26.9	30.6	34.7	39.5	44.8	50.9	57.9	65.7	74.7	85.0	96.5
	44 x 17	18.8	21.3	24.2	27.6	31.3	35.4	40.4	45.9	52.1	59.3	67.2	76.4	87.0	98.8
	45 x 17	19.2	21.7	24.8	28.2	32.0	36.4	41.3	46.9	53.3	60.6	68.8	78.2	88.9	101.0
	46 x 17	19.6	22.2	25.3	28.8	32.7	37.2	42.2	47.9	54.5	62.0	70.3	79.9	90.1	103.3
	47 x 17	20.0	23.2	25.8	29.4	33.4	38.0	43.2	49.0	55.7	63.3	71.8	81.6	92.9	105.5
	48 x 17	20.5	23.7	26.4	30.1	34.1	38.8	44.0	50.0	56.8	64.7	73.3	83.4	94.9	107.7
	49 x 17	20.9	24.2	26.9	30.7	34.8	39.6	45.0	51.1	58.0	66.0	74.9	85.1	96.8	110.0
	50 x 17	21.3	24.7	27.5	31.3	35.5	40.4	45.9	52.1	59.2	67.4	76.4	86.8	98.8	112.2
	51 x 17	21.7	25.2	28.0	31.9	36.2	41.2	46.8	53.1	60.4	68.7	77.9	88.6	100.8	114.5
	52 x 17	22.2	25.7	28.5	32.6	36.9	42.0	47.7	54.2	61.6	70.1	79.5	90.3	102.8	116.7
	38 x 16	17.2	19.5	22.2	25.3	28.7	32.6	37.1	42.1	47.8	54.4	61.8	70.1	79.8	90.6
	48 x 16	21.8	24.6	28.1	31.9	36.2	41.2	46.8	53.2	60.4	68.7	78.0	88.5	100.8	114.4
	50 x 16	22.7	25.7	29.3	33.2	37.7	42.9	48.8	55.4	62.9	71.6	81.3	92.2	105.0	119.2
	51 x 16	23.1	26.2	29.8	33.9	38.5	43.8	49.8	56.5	64.2	73.0	83.0	94.1	107.1	121.6
	52 x 16	23.6	26.7	30.4	34.6	39.3	44.6	50.7	57.6	65.5	74.4	84.4	96.0	109.2	124.0

All the gear combinations shown are OK for use on solo bikes, by riders who weigh less than 100Kg.
The Bright yellow highlighted Gear options are OK for use by riders over 100Kg, or for use on tandems.
The green column shows 8th gear.
The pink column shows 11th gear which is direct drive.

26" wheel gear chart for Rohloff hubs