PENDAL GOES PENDALOLO

Jens Mindegaard from Soeborg, near Copenhagen, Denmark, sends an update on the development of the Pendal concept which he explained in his article 'Power and Posture' in Issue 28. His latest prototype is the easy-boarding 'Pendalolo'.

The idea of the Pendalolo springs from the need make the two most awkward moments in cycling, the 'take off' and 'landing', easier for children, older people and anyone with limited mobility.

In the new Pendalolo frame, the large main-tube bends to offer a low step platform between the wheels. This 26 x 12 cm platform is just 16 cm (around 6") above the road, and the ground clearance below it is 9 cm. This 'Low Load' functionality inspired the 'LoLo' in Pendalolo.

Riders young and old can get onto the Pendalolo very easily, as they would with a skateboard. The Pendalolo can also be used as a very low-stepthrough ladies bike.

The rider can step onto the platform with one foot and push off with the other, starting off like you would on a skateboard. Then, when in motion, move up to sit onto the saddle. After that you can put the feet on the pedals and start cycling. Alternatively, you can start off just like on a traditional bike.

Coming to a halt after your bike ride is just as easy.

As an alternative for fitter riders, the step-platform between the wheels could be used to carry heavy luggage, clear of the rider's pedalling area.

As with the other members of the Pendal family of bike, I would argue that for the Pendalolo, placing the pedal drive shaft on the axis of the driving rear wheel offers significant advantages. The whole bicycle can be simple, efficient, and robust, and the power train is protected within the crank hub.

The simplest Pendal frame consists of a single large-diameter main-tube, running straight from the rear crank-hub to the front steering crown. This produces excellent torsional rigidity for the frame. Bending the main tube for the Pendalolo design will still retain most of the frame's stiffness: it will add extra material and weight, but the frame rigidity will remain excellent.

Like with the other bikes, the key element in the Pendalolo is the crank-hub gearbox in the rear wheel. This single sealed unit contains the complete transmission system. So there's no chain and very low or zero maintenance. The epicyclic crank hub gearbox currently has a single, fixed ratio. But the current design can be made in versions offering a step-up ratio ranging from 2.5 to 4.0, with or without freewheel.

I think the single gear Pendal or Pendalolo designs are good candidates for production, especially as single-speed and fixed riding is now so popular. But some may well want more ratios. I do not know of any currently available multi-speed hub drive system with the crank axle concentric with the wheel axle. But planetary gear technology is very well-known and reliable, and existing cycle hub gears prove that mass production can be cheap. So it's perfectly possible. Are any manufacturers reading this? Please get in touch!

I would be glad to give a demonstration of the bicycle to any interested party, and you would be very welcome to try a prototype in action. If any reader or company is interested in this new bicycle concept then I would be delighted to provide further relevant information, so please do not hesitate to contact me.

I'm looking forward to hearing from you!

Jens Mindegaard

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