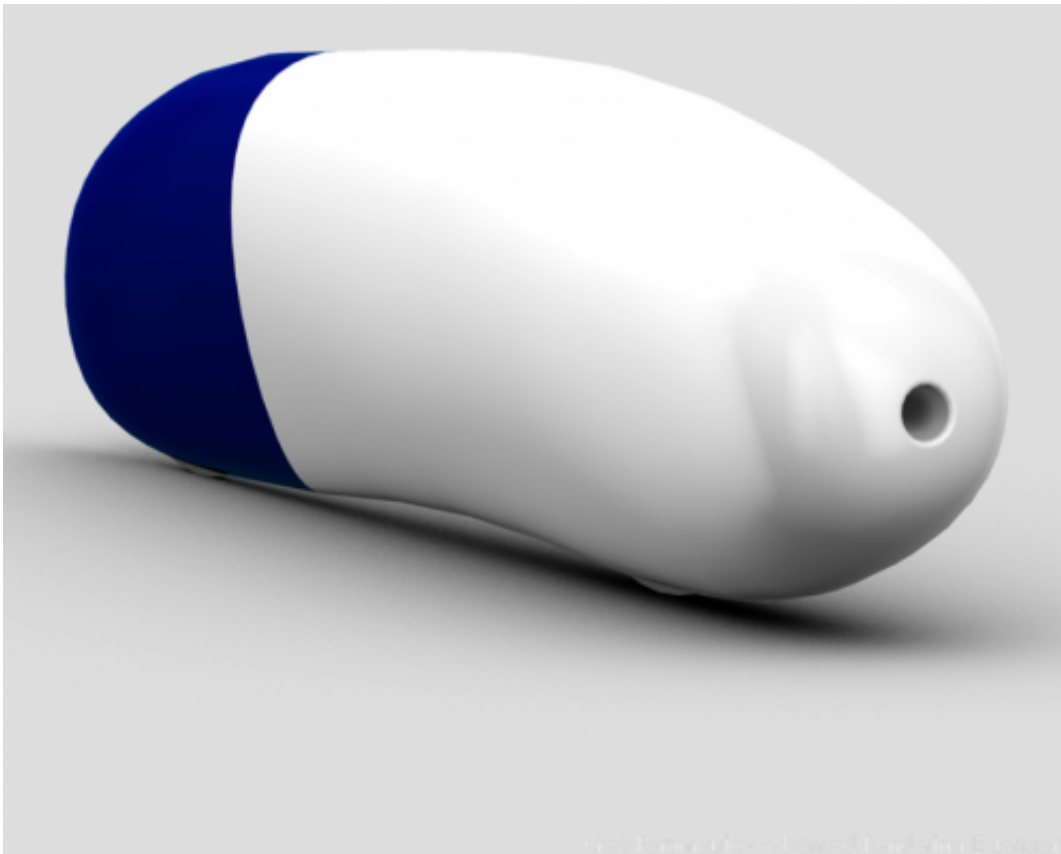


# Liverpool team preps Arion1 Velocipede for speed challenge 2015

April 25 2014, by Nancy Owano

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Credit: Institution of Mechanical Engineers

(Phys.org) —A speed history-making cycle is being prepared by a team of eight determined UK engineering students. They have ambitions to unleash a vehicle capable of reaching a top speed of 90 mph by pedal power alone. As such, it could become the fastest human-powered

vehicle in history. The name of this vehicle is the Arion1 Velocipede. The design is by Liverpool University students, known as the ULVT (University of Liverpool Velocipede Team). They hope to break the 83.13 mph record set last year by TU Delft and VU Amsterdam universities. The competition to break the record for the fastest human powered vehicle is governed by the International Human Powered Vehicle Association (IHPVA), which hosts an annual event, the World Human Powered Speed Challenge, an event that takes place under rigorous test conditions in Battle Mountain, Nevada.

According to the university's student news service, data is touted such as the future ARION1 Velocipede becoming 40 times more aerodynamic than a Bugatti Veyron and generating enough power to light the average UK home.

The design involves the rider being just five inches from the floor, generating over 700 watts of pure human power. The ARION1 is to use a camera to feed images to a monitor in front of the rider's eyes.

The rider is positioned almost lying down, close to the ground, minimizing air resistance in "recumbent" cycling style. The [vehicle](#) encasement is a carbon fiber shell. The design looks odd, like a giant speeding bullet or a junior-sized spaceship, but the shape is for practical reasons. A *Daily Mail* report noted, "The unusual shape of the Arion1's exterior shell improves the aerodynamic behavior of the vehicle as air resistance is the biggest challenge to maintaining speed. The design uses the same concept as aircraft wings adopting an inverted 'teardrop' [shape](#) to cut through the air as easily as possible." The ARION1 weighs less than 25 kilos (55 pounds).

The University of Liverpool Velocipede Team (ULVT) are members of the Institution of Mechanical Engineers. Philippa Oldham, head of transport at the Institution of Mechanical Engineers, said, "To get to the

speeds they intend to, the team will have to make sure everything is perfect, from the vehicle's aerodynamics to the size of its wheels."

The team aims to have the Arion1 designed and manufactured by May next year, in time for the record event in September of next year at the World Human Power Speed Challenge in Battle Mountain, Nevada.

**More information:** [www.imeche.org/news/institutio ... test-bike-in-history](http://www.imeche.org/news/institutio...test-bike-in-history)  
[ulvt.co.uk/](http://ulvt.co.uk/)

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