

## Why was cycling not included in the ancient Olympics?

By [Les Earnest](#), © Cyclops USA, August 2004; [Some rights reserved](#)

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The obvious answer to the title question is “Because bicycles had not been invented yet.” However technology sufficient to build a bike had been around for about 1,200 years before the Olympics began in 776 BC and roads that were adequate for chariots could have been used by bikes. If bikes had been invented in a timely manner, warfare and world history would have been very different.

### Old Technology

Much of our written history is taken from earlier writers who have filtered and adjusted their reports to fit their models of the world. The further back we go, the sketchier is the record, in general, and major segments are obscure because observers were illiterate, accounts have since been lost or mythmakers have been at work. All successful inventions seem to accumulate mythical baggage and the bicycle is no exception. I will skip over known frauds such as the bikes allegedly designed by Leonardo da Vinci, the mythical M. Sivrac of Paris and Kirkpatrick Macmillan of Scotland. The first proto-bicycle was invented in 1817 by Baron Karl von Drais de Saurbrun in Karlsruhe, Germany. It was called a “Draisienne” and patented in France the following year. It was introduced in Britain in 1819 as the “hobby horse” or “dandy horse” and came to America in 1821.



Draisienne or Hobby Horse, 1817

This machine had a steerable front wheel and was propelled by the rider’s feet acting against the ground, which provided a faster and more efficient means of locomotion than walking. It was very fast downhill as long as it was kept under control because the rider

could lift his feet and coast (at some peril since it had no brakes). It was demonstrably faster than runners and was even able to beat horse-drawn carriages over rolling terrain. It was also hard on shoes, which had to mediate both propulsion and braking.

The Draisienne was mostly made of wood, a very old technology. This raises the question, "Why did it take until 1817 for the first proto-bicycle to appear?" Wooden wheels with axles and roads to roll them on were being built in the Middle East by the beginning of the Bronze Age, around 3500 BC. The Old Silk Road ran 6,000 miles from China to Europe. Spoked wooden wheels similar to those used on the Draisienne appeared in Mesopotamia by 2000 BC and were used in chariots in Syria, Egypt, and Western Mediterranean before 1400 BC. The Iron Age began in Asia Minor around 1100 BC.

Spoked wheels appear to be an essential precursor to building a bike that is light enough to be useful, so the technology needed to build the Draisienne had existed for around 1,200 years before the Olympics began in 776 BC. High quality roads appeared in the Roman Empire beginning with the Apian Way in 312 BC but still no bikes were invented. In fact, the roads in Europe and Americas in the 19<sup>th</sup> Century, when bicycling eventually took off, were mostly unpaved and in worse condition than those of the Roman Empire.

During the 17<sup>th</sup> through 19<sup>th</sup> Centuries various four wheeled human powered vehicles were built, generally for gentry to ride while their servants provided the power. That changed temporarily with the introduction of the hobby horse in the period after 1818, which turned into a fad among much of the aristocracy of Europe and America. These machines also were used to deliver mail in France for a time. They worked well in summer but bogged down in winter and were subsequently abandoned. Surprisingly there was no further development of bikes for the next 40 years and they faded from general use.

The reason for this stagnation is not clear, but may be related to other concurrent technological developments. The first steam locomotive was built in 1814 by George Stephenson of England. Stephenson continued to develop his invention and by 1829 had built a practical locomotive called the "Rocket," which immediately led to development of railroads throughout Europe, the Americas, and Asia.

Did the importance and popularity of railroads deter further development of the bicycle? This seems unlikely inasmuch as these two transportation devices were complementary -- trains can carry large numbers of people very efficiently but are constrained to a small number of routes and a limited number of departure times whereas bicycles can convey individuals in almost any direction at any time.

The technological sophistication involved in building railroads and locomotives was much greater than would be required to build an efficient bicycle, but somehow it didn't happen right away. The principal competition for the bicycle (such as it was) continued to be the horse, which remained dominant. Given the logistical and potential economic

advantages of bicycles over horses, it is hard to understand why bicycles were not developed further in this period.

Bicycles did not become popular until cranks and pedals were added to the front wheel in the 1860s, as shown below. This was done by either Ernest Michaux or Pierre Lallement, both of France, depending on who you believe. Whoever invented it, the other one swiped the idea, pedaled off and peddled it, but we don't know for sure who was the bad guy. In 1866 Lallement moved to the U.S. and patented it there.



Velocipede, 1863

Wire spokes were invented in 1868 by Edward Copper, which made possible the construction of much lighter wheels. Solid rubber tires were also introduced that year and softened the ride of the “boneshakers,” as they were then called. The first all metal bike was built in 1871 and led to the development by 1873 of the “high wheeler” or “ordinary,” as it came to be called. The pursuit of higher speeds led to the development of grotesquely large wheels that, in their extreme forms, could be ridden only by very tall men.

Despite all these advances and a general cycling craze in the late 1860s, public interest in these machines waned significantly in the 1870s. They continued to be used by enthusiasts but were not in the mainstream of transportation.

The caliper brake was patented by John Kemp Starley in 1879, a chain drive by H.J. Larson in 1879 and the freewheel by J. White and G. Davies in 1881. A three-speed gear was introduced in 1883 and the diamond frame appeared in 1886. Pneumatic tires were invented in 1888 by John B. Dunlop, a veterinary surgeon from Scotland living in Belfast, and became standard equipment by 1891.



High Wheeler, 1873

The last major change in bicycle design was the introduction in England of the “safety” bicycle by John Kemp Starley in 1885. It used a chain drive to the rear wheel, which permitted the front wheel to be made much smaller. This in turn improved the stability of the machine, which had earned the nickname of “widow-maker” because of its tendency to throw riders from substantial heights onto their heads. By the 1891, then, bicycles were widely available that looked much like those used now, though they were much heavier.



Safety Bike, 1891

It is remarkable that even after safety bicycles were introduced, many cyclists clung to their idiosyncratic high wheelers. Even today, many people seem to have a romantic attachment to images of those inefficient and dangerous machines.

Nevertheless, the safety bicycle came into widespread use in the 1890s and turned into a fad that revolutionized travel, clothing, and the emancipation of women. The rich used them for exercise. Working men commuted to work and toured the countryside on weekends. Women used them for shopping and recreation.

There were bike races for both men and women with good prize lists. The better riders, both men and women, were able to make a living at it and were properly regarded as “pros.” However women pros were largely ignored by national cycling organizations of that time and female riders were generally regarded as indecent inasmuch as they often exposed their ankles and even calves to public scrutiny! On the other hand, while baseball had already become a national pastime in the U.S., cycling became even more popular and top male racers enjoyed greater celebrity than top baseball players.

Few roads were paved in that era, so cyclists and their organizations such as the original League of American Wheelmen (LAW) initiated a successful political push to pave them, only to be overrun a short time later by motor vehicles. Many of the bicycle manufacturers of the 1890s became automotive or aircraft pioneers in the 1900s, including Henry Ford, the Wright Brothers, Glenn Curtis, and Charles Duryea. The technology and manufacturing techniques used to build these new machines were derived directly from bicycle construction practices. In other words, the bicycle was a pivotal invention that helped society move at a faster pace and led to successive inventions that revolutionized the world.

However, the cycling fad collapsed in the United States in 1897. American bike racers, who had been world class and even had dominated many international competitions, began to fade away as many took up motorcycle or car racing.

#### **Newer Technology**

Bicycle technology continued to advance through the 20<sup>th</sup> Century and continues to be of great economic and practical importance as transportation in underdeveloped countries. Despite the successes of railroads, automobiles, and airplanes, more people in the world are currently transported on a daily basis by bicycle than by any other means of conveyance. Motor bikes, motor scooters and motorcycles are direct descendants of 19<sup>th</sup> Century bicycles and enjoy widespread use for commerce and recreation throughout the world.

Bicycle technology continued to advance throughout the 20<sup>th</sup> Century, especially in the last 50 years, as improved drive train components, brakes, wheels, frame materials and helmets were developed. New bicycle configurations appeared, including BMX, mountain bikes and the unrestricted human powered vehicles, all originating in California. However, few bicycles are now manufactured in the U.S. because of labor costs.

#### **Observations and Questions**

Looking back, we see that there have been three main surges in bicycling popularity:

- (1) In the 1820s after the Draisienne was invented,
- (2) In the 1860s after cranks were added to the front wheel,

(3) In the 1890s after creation of the safety bike.

There was a smaller surge in the early 1970s when the Arab oil boycott drove up fuel prices and we can expect that to happen again whenever fuel prices start rising substantially. Observations above on the slow pace of technological advances lead to two unanswered questions.

*Why did it take over 4,000 years for the bicycle to be invented after it became feasible from a technology standpoint? Was it just because nobody thought of the ridiculous idea of balancing on two wheels? I suspect that almost anyone who did think of that would have rejected it on the grounds that such a machine would be statically unstable. Most likely Baron von Drais thought that his bike could be stabilized by using his feet on either side but discovered after it was built that he could accomplish the same thing by using the steering mechanism. In any case, if it were not for the good Baron we might still be getting around on horses.*

*Why did it take over 40 years after the invention of the hobby horse to put pedals on it? The principles of cranks had been known for thousands of years, yet it somehow was not obvious to early 19<sup>th</sup> Century inventors that a bicycle would work much better if it were pedaled instead of pushed.*

Think of how different human history would have been if cycling had become popular in, say, 1000 B.C. Commerce would have been stimulated, armies would have moved much more quickly and follow-on inventions likely would have advanced technology at a faster pace. There also would have been bicycle races in the ancient Olympic Games. Overall, if you believe that “Necessity is the mother of invention” then you will have to admit that her gestation period is sometimes remarkably long.

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