



FREEWHEELER NEWS

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Early Vehicles

By John Tetz

Introduction

Many of you probably know the technical development of the bicycle. However, typical accounts that are thought to *explain* the history of the bicycle, just sum up some related memorable happenings. The tendency to regard these common accounts as an acceptable way to retell history, often hides the fact that there was much more going on.

My intention is to provide a different view of history - one that describes how the “underground” developed a viable 21st century human powered alternate transportation vehicle.

1817 - The Drazine

This vehicle had no pedals. The Rider straddled the frame, much like you would ride a horse, and pushed against the ground with his feet as shown in the picture.

Once I broke a chain and got home by pushing against the ground; so it does work quite well on the flats.

Front wheel steering was the key in mastering the twin arts of keeping the machine up right and balanced – something which was thought to be impossible.



It is curious that it took until to the 1800s to come up with the concept of a bicycle. One would think the Greeks or Romans would have, after all, the wheel was well developed by then. But, as history shows, the brain takes a while to adapt to new concepts.

As an example, Egyptian art is two dimensional frontal plane which was practiced for a couple thousand years. The Greeks developed three dimensional representations. As another example, it took until the 1400s before perspective was conceived for drawing and painting - amazingly late in human development. It was in the same time frame as the invention of movable type and the book – the equivalent internet of its time.

Pedals added in 1865

It took 48 years for this change to occur. Getting the feet up off the ground harnessed the power of the legs more efficiently and produced a Velocipede - *fast feet*. This was the first front wheel drive bicycle.

At the time, horses commanded road right-of-way. Cyclists claimed they had no rights on the nation's streets and roads. (Similar to the problem in the 21st century with cars !!!!) The public didn't like the Velocipede because of its speed. It seemed un-natural. Not having brakes, along with out of control speeds, might have had something to do with it. But overall the public resistance was, mistakenly, clinging to the horse when something better was at hand (the brain thing again?)



The High-Wheeler

About 1870 the High-Wheeler was developed. The large wheel produced higher speeds. A high wheeler was a most difficult and dangerous contraption to ride. Primarily only the young male daredevils would take this vehicle on.

At the time bike racing was the most popular sport and the riders got paid larger salaries than any other sport.

The public loved the elegant aesthetics of these beautifully crafted machines and were excited by the spectacular crashes. This only increased the bravery of those who could and wanted to ride them.



1884 Safety Bicycle



The diamond like frame, chain drive and smaller wheels of equal size made the *Rover Safety Bicycle* easier and safer to ride for anyone. Interestingly, chain drives were around during the high wheelers time but were never used for bikes (probably because the efficiency was poor).

The *Safety* was not accepted at first because the small hard tires gave a harsh ride (note the suspension on the seat). However, with the invention of the air tire and with its lower frontal area (less aerodynamic drag), it eventually overcame the high wheeler in popularity.

It took 14 years for the *Safety* to replace the High-Wheeler.

Stabilization

The name 'Bicycle' stabilized in its interpretation about 1897.

After the stabilization of the bicycle, radical innovation became much harder. Today, the bicycle is still the same in 'essential positions' well over 100 years after the stabilization and closure of its meaning.

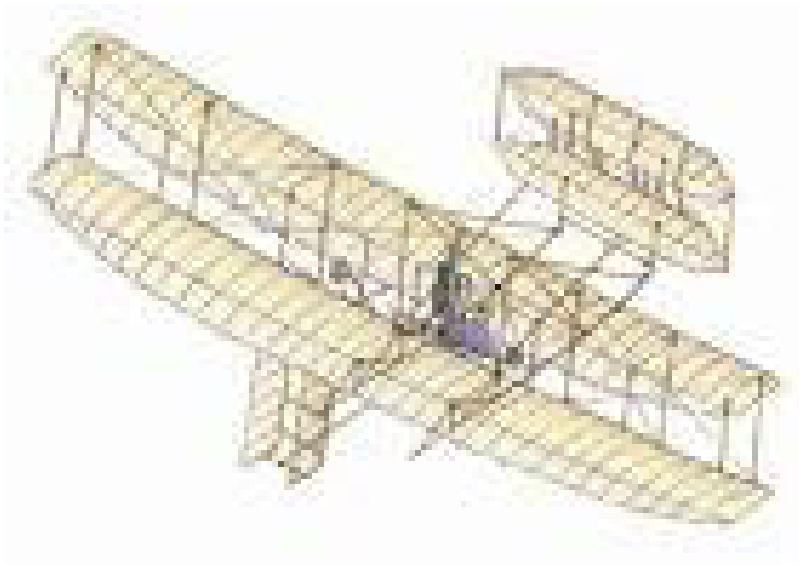
Here are photos of a 1905



and a 1995 bike.

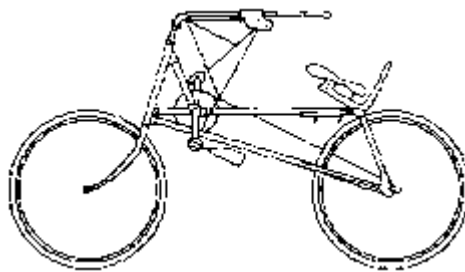
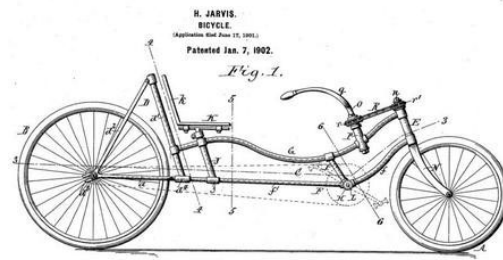


The Wright Brothers were flying by 1905.



The Underground

All during this time, there were individuals, working independently, exploring other shapes and forms for their bicycle designs. Here are some photos of a couple of early “odd” bikes.



An 1897 hand cycle

Alternative Culture

On one side, there is the mainstream bicycle culture. On the other side, there exist the seeds for an alternative culture (the basis of this story). A new relevant social group became manifest here, a group that thinks outside the dominant interpretation of the bicycle. This is an underground of individuals who are radical innovators, identifiers, creators.

Many experimental designs were based on a reclined position, eventually called a recumbent position. This was for both comfort and reduced frontal area (lower aerodynamic drag). Most did not surface into a market position, yet the developments were passed on to affect later designs.

A Monumental Historical Event

In 1932 a French designer, Mochet, built a laid back bike called Velo Velocar. An amazingly advanced vehicle design for its time. It was very radical in contrast to the safety bike that had been around for well over 40 years. The seat back could be adjusted for comfort for normal riding or could be leaned back for racing. In addition, the rider's legs were in line with the air flow. Both of these features reduced the aerodynamic drag.



In 1933 a rider was found, Francis Faure, who was a second class athlete. The “first class” professional riders would not be seen on such a vehicle. Faure was unique in that he had no air, no ‘attitude’ and saw no problem in racing something different.

This photo tells a story.



**The start of a bicycle race.
Faure is on the right recumbent.**

The rider to the left is looking straight forward with a stern look. The middle rider is looking at this odd bike and you can almost hear him say “What is that thing?” The recumbent team has great big grins. They know what’s about to happen.

All season Faure won practically every event including:

- ◆ The 5 km, 10 km, 20km, 30km, 40km, 50km distance races
- ◆ The half hour, the hour timed races

The Decision

Mochet and Faure had stirred up a hornet's nest. The professional racers were insulted that a second class rider beat them. They lobbied the Union Cyclists International (UCI) to do something with this up-start. The UCI rules are based on athletic rather than a technology competition, so in 1934 the UCI banned the recumbent by saying it wasn't a bike. They promptly removed all of Faure's results from their record books. Today, most of the UCI officials, and the general biking world, are not aware of this event.

The Effect

The Velo Velocar challenged the long held consensus that the *Safety Bicycle* is 'best.' The UCI rulings put on paper the dominant interpretation of the bicycle. The UCI could have decided to have 2 classes but didn't. Had they done that, different type bikes would have been developed. But like the Egyptian art and perspective in paintings, was this the brain's inability to adapt? Surely the dated vertical position of the upright rider was not in line with the aerodynamic knowledge gained from 'airopplanes' of the day.

I have a connection to this event. The Velo Velocar was designed in 1932 the year I was born. Because the recumbent was banned, today wherever I go on one of my recumbent bikes I get treated like a celebrity. People are curious and stop to talk to me about it. Women like the large comfortable seat. I would be rich if I could collect a dollar for every cell phone picture taken. Pulling up in front of the windows in a restaurant typically there is a sea of faces peering out. If the UCI had chosen two classes, recumbents probably would have become so common by now, that I would be just another old fart on a bike.

The UCI verdict also cast the upright in concrete – no real changes allowed. It also drove the recumbent into the underground again signifying the end of more radical developments. The rule makers of racing give attention to racing heroes, not to the unknown, the anonymous bicycle commuter or cycling tourist. Commercial interest followed the attention..... as it still does today.

The public also rejected the recumbent. When society gets used to a certain artifact, this widespread acceptance often obstructs different technology particularly if that technology isn't allowed time to prove itself.

The Velocar was too odd looking. During a race the faster recumbent was out front by itself - the others tightly packed competing with each other. The recumbent was unsuitable for creating the spectacle that racing in groups did.

Speed is important, but spectacle is even more important and regular racing provided lots of it.

Timing

The Velo Velocar surfaced very suddenly and having only a season or so, the recumbent never had a chance for its design to be interpreted and accepted.

Designers outside the UCI rules could have formed a group but at the time these inventors were isolated from each other. Proof and acceptance of their designs would take a long time. **Remember it took 18 years for the Safety to be improved enough to replace the High Wheeler.** But don't despair. This story has a happy ending.

By the later 30s, the world was headed towards a world war and bicycle development stopped.