Wheels - what speeds can they do?

430 km/h (267 mph)	1974	Aerotrain, France	Hovercraft on track	Jet propulsion
574 km/h (357 mph)	2007	TGV test train	Steel wheel on rails	Wheel driven electric
603 km/h (375 mph)	2015	SCMaglev, Japan	Maglev suspension	Maglev linear motor
706 km/h (439 mph)	2013	Potent & Main Car	Pneumatic tyres on salt	Wheel driven, petrol
1001 km/h (622 mph)	1970	Blue Flame Car	Pneumatic tyres on salt	Rocket propulsion
1,228 km/h (767 mph)	1997	Andy Green Car	Alloy wheels on salt	Jet propulsion

Capable of much higher speeds, despite limited development

Wheels have proved to be capable of much higher speeds than any other technology, they have been used up to 1,200 km/h on unprepared surfaces. Until Hyperloop, there has been no commercial need for high speed wheels, and no development for decades. Maglev, after 60 years of intense R&D, has only been demonstrated up to 600 km/h on a highly expensive track.

Pneumatic tires 1000 km/hr in 1970

Goodyear made pneumatic tires capable of 1000 km/h, 45 years ago, for the Blue Flame rocket car. Gary Gabelich drove it at 1001 km/h (622 mph) on an unprepared surface at Bonneville salt flats in 1970. The tires were quite reliable, one tire did all 25 runs.

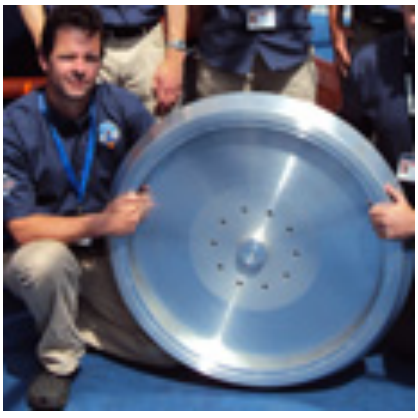
Craig Breedlove used similar tires in his Spirit of America at 965 km/h, (600 mph) in 1965. It was jet-powered.

In the 1960's and 70's, polyester (Nylon) fibres were the best available for the fabric of the tire structure. Modern fibres such as Kevlar, PBO and carbon are at least 5-10 times stronger, which would allow much higher speeds.

Tires using modern high-modulus fibres could easily handle the rotational forces at Hyperloop speeds.

Metal wheels 1,200 km/h - Hyperloop speed


Aluminium wheels will run at 1,600 kph on Bloodhound



Forged aluminium wheels were used by Andy Green doing 1,223 km/h (763 mph) in his jet-powered car in 1997.

The wheels performed well at Hyperloop speed, 1,200 km/h, and a similar design will be used for his 1,600 km/h (1,000 mph) attempt in Bloodhound.