

How Much is a Human Power?

Power is measured in odd ways. Most of us understand it in terms of horsepower (hp), an fps unit of power based on the foot (12-inch kind), pound, and second as units of length, mass, and time. Thus, one horsepower equals 550 foot-pounds per second. However, most scientists and technicians use SI units, for which the derived power unit is the Watt (W), equivalent to 1 joule per second. A joule, heh, is the work done when the force of 1 newton is displaced through a distance of 1 metre. It takes 746 W to equal 1 hp.

One time at the York Cycle Rally, Bluebell rider Tim Gartside had a go on a bicycle ergometer run by the British National Team. He held a cracking pace for 5 or 10 minutes or whatever, and then did his thing, standing up out of the saddle and sprinting, registering a peak of 1.9 hp before the rig started to come apart. This kind of power output, even just for a few seconds, is very, very rare.

A common benchmark is the performance of world champion Eddy Merckx, who produced 455 W for 1 hour on an ergometer. A healthy, well-conditioned cyclist might be able to keep up this rate for perhaps a minute. A trained, healthy person can output about 700 W for a few seconds, and about 180 W for 1 hour. Over a longer period of a few hours, an average cyclist produces 50 to 75 W or about 0.1 hp.