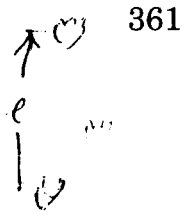


Calculations by Helfenstine...

$$\frac{l}{h} = 2.3 \left(\frac{v^2}{g} \right)^{.3}$$

- v = velocity in m/sec
- l = stride length
- h = hip height
- g = 9.8 m/sec²



Hastings uses $h = 1.5$ meters

$$l \approx 2.52 \text{ meters}$$

$$\frac{l}{h} = 2.3 \left(\frac{v^2}{g} \right)^{.3} \Rightarrow \left(\frac{v^2}{g} \right)^{.3} = \frac{l}{2.3h}$$

$$\text{m/sec} \times 2.273 = \text{MPH}$$

$$\frac{2.52 (9.8 \times 1.5)^{.3}}{2.3 \times 1.5} = (v^2)^{.3}$$

$$\frac{2.52 (2.24)^{.3}}{3.45} = 1.636 = (v^2)^{.3}$$

$(v^2)^{.3}$	v	mph	$v^{0.6}$
1	1 m/sec	2.273 mph	1
1.32	1.32 m/sec	3 mph	1.881
1.76	1.76 m/sec	4 mph	1.404
2.235	2.235 m/sec	5 mph	1.620
2.682	2.682 m/sec	6 mph	1.807
3.576	3.576 m/sec	8 mph	2.148

$$5.28 \text{ m/sec} = 12 \text{ mph}$$

$$2.5 \text{ m/sec} = 6.8 \text{ mph}$$