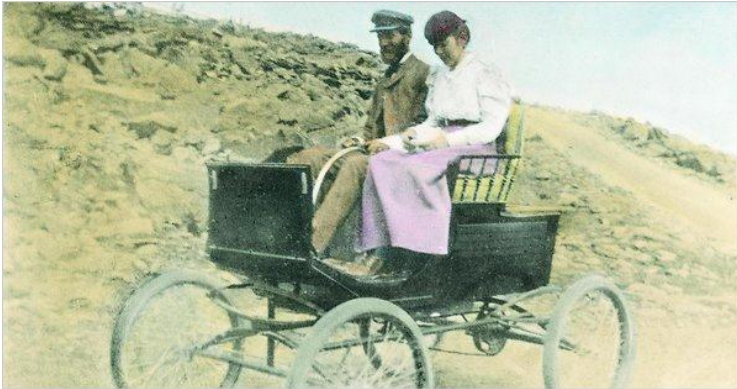


# WORK/ENERGY/POWER

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Taming a Mountain Road With Horses and Cars



**INTRODUCTION:** The Mt. Washington Carriage Rd. is actually a 4,727 ft climb from base of Mt. to top. The Stanley Locomobile(steam powered) had a weight of 1000 lb. The Mercedes Simplex's weight = 2800 lb. **QUESTION:**(a)Find speed(in mph) of each car to ascend the Mt.?(b) Find the HP used by each car to climb the Mt. at constant speed? Show all calculations.**HINT:** Time to climb is given in article.  $P=mgh/t$

**ANSWERS:** (b) Stanley = ~1.1 HP, Simplex = ~60HP, (a) Stanley  $v = \sim 3.51$  mph , Simplex  $v = \sim 18.52$  mph

**ON TOP** F.O. Stanley and his wife, Flora, in 1899 became the first people to drive up Mount Washington in New Hampshire in a car.

IT was something of an Equine Liberation Day for horses in northern New Hampshire on Aug. 31, 1899. And it was a pretty good occasion for adventuresome tourists, too.

That was the day that F. O. Stanley and his wife, Flora, decided it would be **good publicity for their steam-powered Stanley Locomobile if it were the first car to be driven up the 7.6-mile Mount Washington Carriage**

**Road.** Since 1861, when the road opened, the trip to the top of the 6,288-foot mountain had normally been by wagon, with horses providing the power. The Stanleys, from Newton, Mass., would change that, creating an enduring relationship between the mountain and the motor car. That continues next weekend with the Climb to the Clouds, a timed hill climb being held for the first time in a decade. A spokesman for Vermont SportsCar, which is organizing the event, said there were about six dozen entries ranging from modern rally cars to a 1933 Alfa Romeo 8C 2300 that had been driven to a Le Mans victory by Tazio Nuvolari. But it began with the Stanleys. "We went on, and up, up, still up, the continuous climbing being varied only by a steepness so excessive that we felt a sickening anxiety lest each brilliant dash should be our last," Mrs. Stanley wrote.

**It took two hours and 10 minutes (not including stops to add water) to get to the top. Getting back to the starting point was still a concern, though.**

Some observers wondered whether the brakes would last through the descent. Engine braking saved the day, however. "That proved as easy as rolling off a log," Mrs. Stanley wrote. "We reversed the engine, played the brake like an organ pedal, just held on and let the thing spin." Since the Stanleys' trek, millions of tourists have oohed and aahed over the scenery and gotten high-anxiety jitters over steep drops and tight turns, including one known as the "Oh-My-God-Curve."

**The road has been a site for auto competitions since 1904. That hill climb was won by Harry Harkness, who drove a 60-horsepower Mercedes Simplex to the top in 24 minutes and 37 seconds.**