

The new Hill cars, shining like bright new bullets, have been making test runs on the Santa Fe tracks in California, hitched behind awkward old-style cars. These test cars are

constructed of plywood. New ones will be made of steel in lightweight construction. An incongruous note is the old-style lump to be seen sticking out near the streamlined tail.

“EMPIRE BUILDER” HILL’S GRANDSON BUILDS A JOUNCELESS RAILROAD CAR

James J. Hill, the Empire Builder of the Northwest, built his empire on railroad tracks—those of the Great Northern, the Northern Pacific, and the Chicago, Burlington & Quincy. Cortlandt Hill, one of Jim Hill’s grandsons, is engaged in another kind of railroad building. For five years Hill, along with William Van Dorn and Dr. F. C. Lindvall, has been working in California on a radically new kind of railroad car. This fall three of their cars will go into test service on three big railroads—the Santa Fe, the Great Northern and the Burlington.

The new cars are low-slung, as streamlined and sleek as a new airplane. Hill calls them “jounceless.” They go around curves like a breeze, ride over bumpy roadbeds with hardly a quaver.

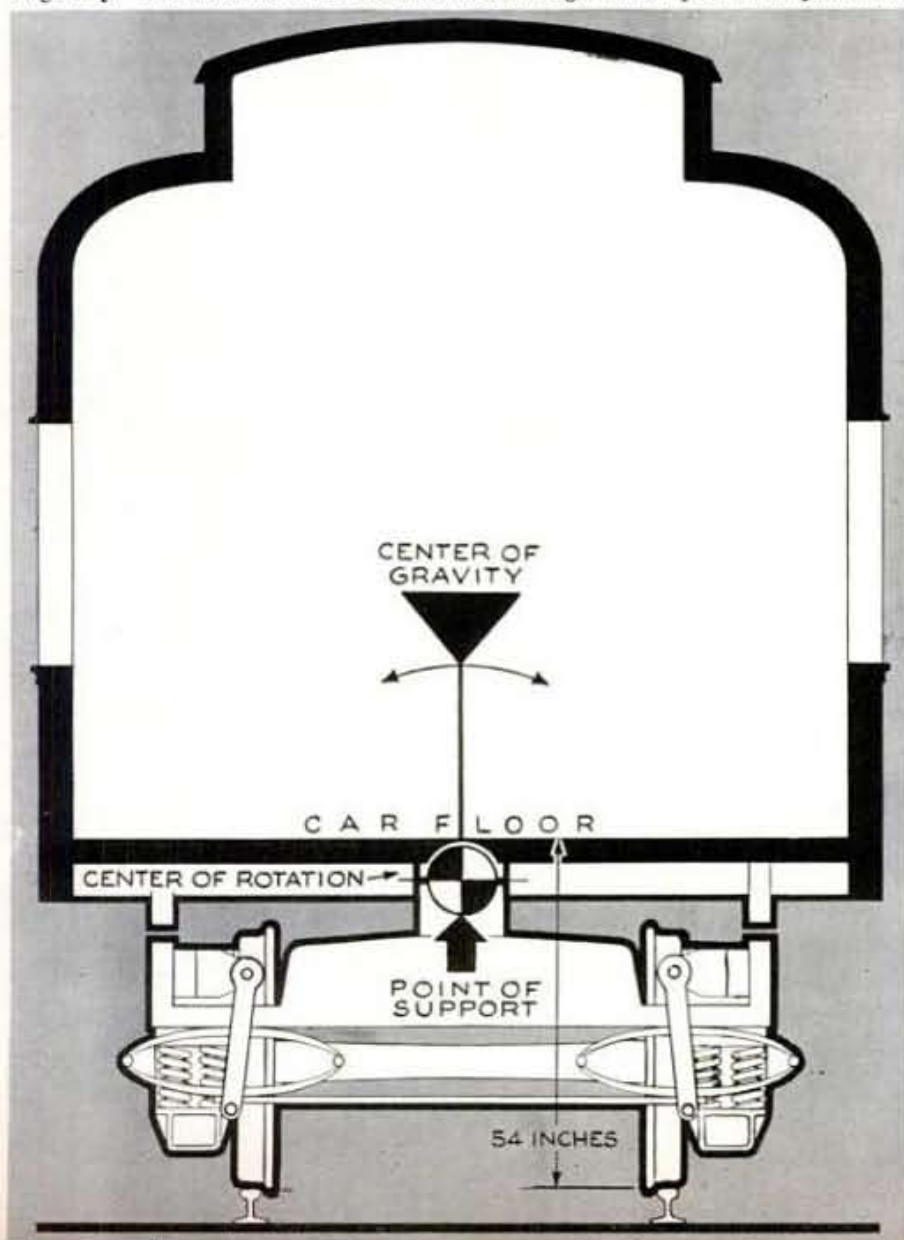
What makes them jounceless is an entirely new kind of suspension, shown in the diagrams below.

The Hill cars have two high springs whose tops are above the car’s center of gravity. Going around a curve, the car hangs on these springs and banks inward. Old-style coaches, sprung well below their center of gravity, fight the curve by leaning outward. The Hill cars’ springs are very soft. As the wheels go over track irregularities, they cushion out the bumps. At 50 m. p. h. the car is virtually vibrationless. At 97 m.p.h. it is still quite comfortable.

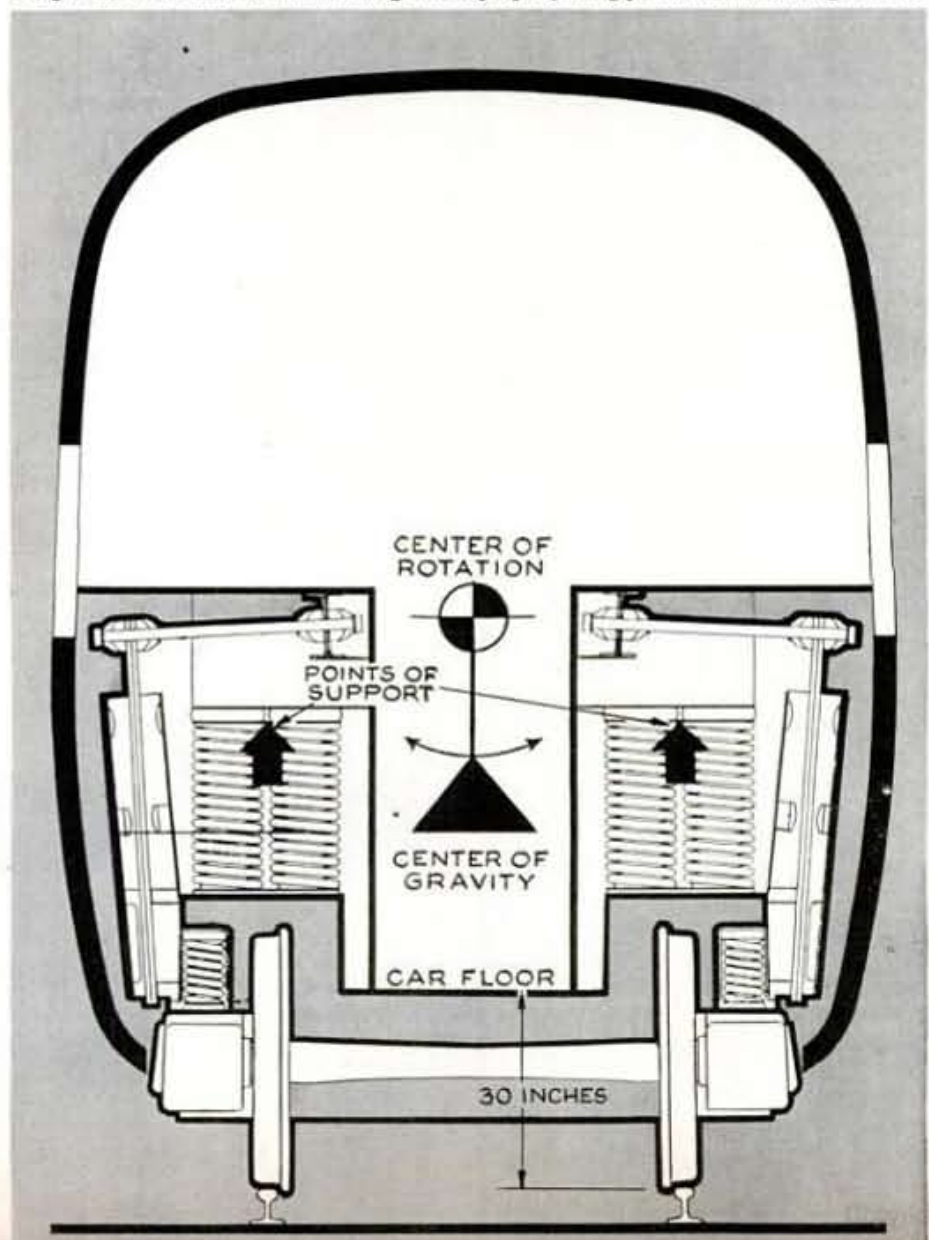
One way of improving railroad riding is to improve the roadbed. This, of course, is a very expensive procedure. The Hill method of improving the car promises a much cheaper and simpler way.

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Old-style railroad car is attached to one point on the truck which is well below car’s center of gravity. With a low center of rotation, the car swings like an upside-down pendulum.

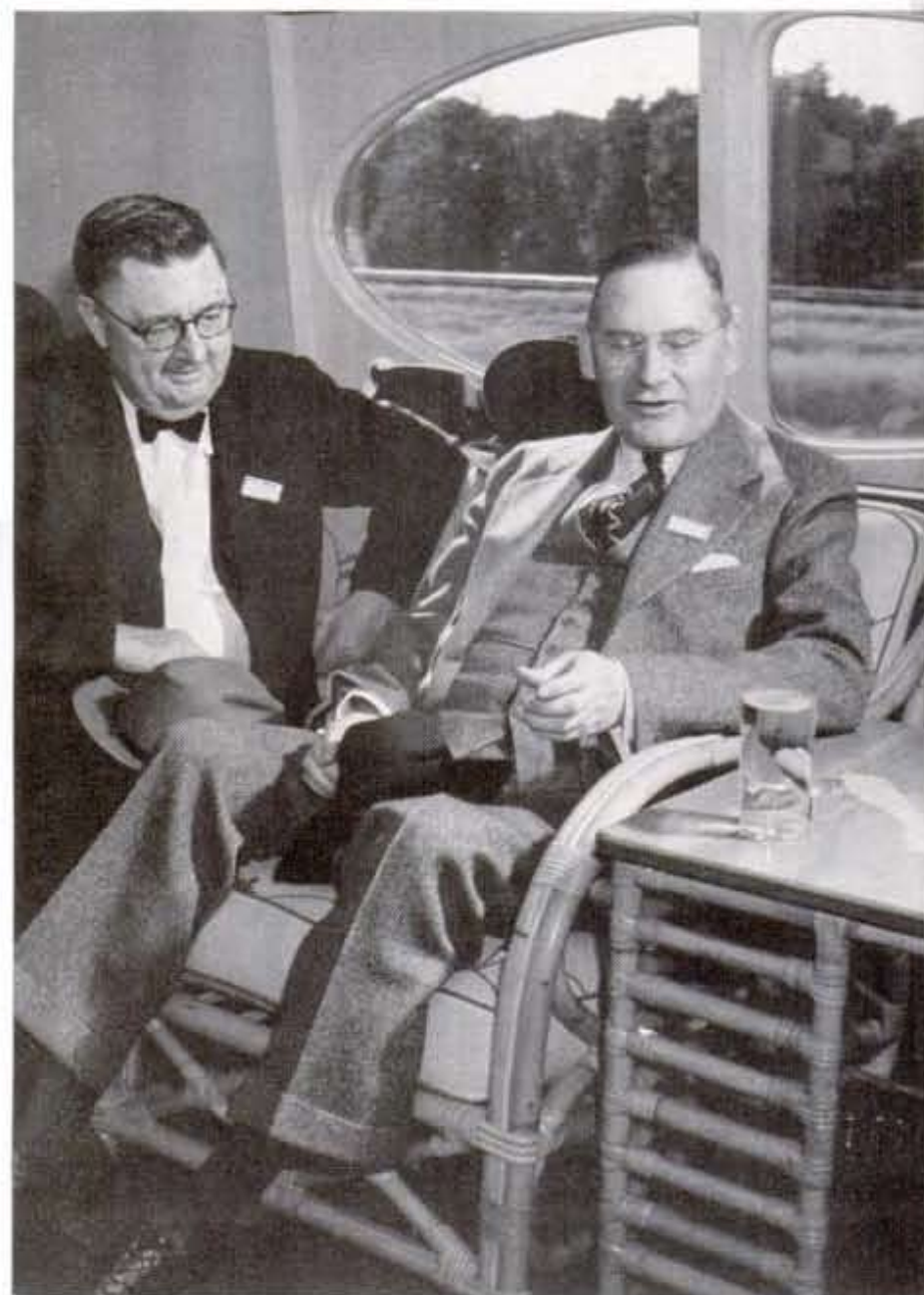


The Hill car balances on two high, soft springs well above car’s low center of gravity. With a high center of rotation, the car swings like a properly hung pendulum, increasing comfort





In an old-style car, a glass of water comes dangerously near to slopping over brim as the train goes around a curve. Notice the tilt of the water surface in the glass.



In the new car, water surface remains level on curve. Only a ripple disturbs it. Left above is O. A. Smith of Pacific Electric Railway. Right is E. E. McCarty of Santa Fe.