

CAR PERFORMANCE With A Trailer

What happens to speed, economy and handling when you hitch a trailer to a car? Here are some of the answers

Photos by Dean Moon



MORE than a million Americans, during a normal year, hitch trailers to their cars and embark on trips that last anywhere from a weekend to a lifetime. Some of these nomads live the year round in such mobile homes; others use them simply to escape from routine and visit out-of-the-way places with convenience and economy that ordinarily do not attend such adventurous travel.

According to trailer salesmen, the average person who buys one of the traveling type is inexperienced and often raises questions about the problems involved. Many of these inquiries deal with the handling qualities of a car-trailer combination and the effects upon performance of a passenger car when it is towing the extra load.

In order to arrive at some answers, the *MOTOR Life* road test crew recently conducted a few modest experiments. These consisted of a 500-mile trip into the California desert where braking, acceleration, high speed and handling tests were performed.

The choice of a trailer was limited to the travel type, as opposed to a mobile home, since most of the latter are rarely moved and when they are, it usually is under special circumstances. In fact, the large "house" trailers often are transported only by special trucks. Some are so large that highway regulations forbid their passage, and they are loaded on railway flat cars for transportation. However, in selecting a trailer for the test, one of the largest travel types was preferred, since anything smaller would not provide conditions exacting enough for both driver and machine.

The choice for the test was an Airstream 30-footer, a tandem (four-wheel) type, which has a reputation for roadability. Its weight, from the factory, amounts to 3980 pounds, including the interior fixtures, such as furniture, stove, refrigerator, water heater and bathroom plumbing. Not included in the weight are such items as food, dishes and personal effects of the travelers.

The Airstream's roomy-low weight factor is achieved by construction that uses no wood. Body is a stressed aluminum

Mercury towed trailer over high mountain road at speed which would have been only slightly better without trailer.



Driver tries a high speed run on flat desert lake to get feeling of the unit. Actual timed tests were made on paved highway.

skin riveted together and mounted on a steel chassis. The double shell is fully insulated and cradled on semi-elliptic springs with beam axles. The center of gravity apparently is low and the 8.70 x 15 wheels carry heavy duty tires for durability. A cross section of the trailer body measures seven feet three inches by eight feet one inch.

In order to establish conditions as close to average as possible, a popular make of car was chosen to tow the trailer. It was a 1955 Mercury Monterey four-door with Merc-O-Matic transmission and the 188-hp V-8 engine.

Since the matter of a proper hitch between trailer and car is important, the Mercury was taken to Howard F. Ward's Trailer Center in Los Angeles where a Tour-Aid hitch was attached to the frame. The Tour-Aid is one of several draw-bar assists which have been developed to aid in removing the hitch-load from the car's bumper and transferring it to the frame and thence to all four wheels of the car. An adjustment makes it possible to shift the load from back to front wheels, as desired, and helps keep the rig level.

Electric trailer brakes, also installed, were regulated by a control lever mounted on the left side of the steering column. In most tests, the car-trailer combination was halted by the Airstream's brakes only, in order to evaluate effectiveness of the system.

Enroute to the desert, the trailer was towed over a mountain road that follows a winding course to several thousand feet in altitude in a 30-mile stretch. The Mercury maintained a good average speed and was easily kicked down into passing gear when necessary. The driver, on this stretch, remarked he could not have made much better time in the car alone under the same traffic conditions.

However, it was noted that the steering characteristics did change. As a curve was entered, the natural tendency of the four-wheeled trailer was to go ahead in a straight line. This had to be compensated for by a somewhat greater turn of the steering wheel. When coming out of the turn, the effect of oversteering had to be compensated for. The maneuver, of course, soon became instinctive and offered no problem.

The trailer itself, probably because of its aerodynamic shape, seemed to offer no resistance to good cornering. At the test site, bends of 60 degrees were taken at 70 mph.

Top speed of the Mercury is in the 100 mph-plus bracket. While operating it with the throttle on the floorboard is never recommended, either with or without a trailer attached, several runs were made over the flat straight course to determine the handicap of the added load. As the driver gained confidence, the actual clocked speeds, considering the altitude factor, rose to a top of 91.6 mph.

Acceleration, naturally, was considerably reduced and gas mileage can be expected to take a drop when towing a trailer of any size. From a standing start, the Mercury pulled the four-wheeler to an actual 30 mph in seven seconds, to 45 mph in 13 seconds and to 60 mph in 20.1 seconds.

Overall mileage on the test trip, which included the most adverse conditions for maximum results—numerous high speed runs, acceleration and braking, along with prolonged idling of the engine—produced a tank average of 10 mpg. Better figures

would be obtained during normal travel.

Braking through the mountains was by the trailer system alone. Since this was expected to cause hot drums, a stop was made to check. They were found to be comfortable to touch, a condition which can be attributed to the large brake lining area with plenty of fresh air for cooling.

In a severe test, again using only the Airstream trailer's brakes, the car and rig were halted in a panic stop from an actual 60 mph. The measured distance was 150 feet, which is about par for the Mercury itself.

What kind of conclusions can be reached from the various tests? Obviously, anyone can hitch, unhitch and tow a trailer of this type, often "without knowing it is there." A severe crosswind or extremely rough roads could create some handling problems. But under ordinary conditions any modern car, with or without power assists, can accommodate the load with ease. Performance will be reduced from approximately one-fourth to one-third, although a little care will produce average operating costs that are only slightly below normal. •

Panic stop on dry lake shows short braking distance from 60 mph. Both here and in measured tests, only trailer's brakes were used to bring both it and car to a halt.

