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Towing with front-wheel drive

It's a bigger problem than you might think

By GARY WITZENBURG

There are a lot of advantages to front-wheel drive, including excellent traction, straight-line stability and improved interior room. So it would seem that a front-drive car would make an ideal choice for a trailer-towing vehicle. Or would it?

The reason front-drive offers generally better traction than the con-

ventional front-engine, rear-drive configuration is that the driving wheels are up front where the combined weight of the engine, transmission and everything else under the hood pushes down on them.

But what happens when a front-drive vehicle climbs a hill? Because of the angle, a certain portion of that front end weight transfers rearward and off of the drive wheels. The steeper the hill, the more the weight transfer. As a result of this weight transfer, a rear-drive car climbs better than a front-drive one beyond a certain an-

gle of grade in slippery conditions; and the best hill-climbing traction of all is actually provided by a rear-engine, rear-drive car like the VW Beetle or the old Corvair.

But what does this have to do with trailer towing, particularly if you plan to stay away from steep hills? A lot, because one other excellent way to unweight the front wheels of a car is by attaching a heavy trailer to its rear. Carried to an extreme, a large enough trailer could lift its tow car's front wheels right off of the ground.

It should be noted at this point that the subject at hand is becoming increasingly important to trailer owners since the automotive world seems to be doing a wholesale shift to front drive as cars are lightened and downsized and designers strive for that last little bit of usable interior and luggage space. Except for GM's huge Olds Toronado and Cadillac Eldorado, which went front-drive back in 1966 and 1967, respectively, front-drive cars in this country have been mostly limited to tiny imports such as the VW Rabbit, Honda Civic, Subaru,

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Towing with front wheel drive

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Fiat 128, Renault, Le Car, and the like. But Ford last year added to the list by importing the little German-built Fiesta, and Chrysler Corporation has already unveiled the first domestic-built mass-production American front-drive small cars, the Plymouth Horizon and Dodge Omni. For '79, GM has redesigned and downsized the Toronado and Eldorado, and Buick's Riviera will join that pair on a common front-drive platform; and within a year GM plans to have its all new, downsized compacts (Chevy Nova, Pontiac Phoenix, Olds Omega, and Buick Skylark) ready for market—complete with space-saving, front-wheel drive. With this trend accelerating, it will be less easy to find a domestic rear-drive car that's suitable for towing, by the mid-1980's, which is only five or six years away.

In contacting manufacturers, distributors and dealers for tips on towing with front drive, first of all, we discovered that few of them had thought much about it. Replies ranged from "It doesn't make any difference" through "we haven't had any complaints" to "Don't do it!"

Equalizing hitch: the answer?

But those who were willing to comment almost unanimously voted for a load equalizing hitch as the biggest answer to the problem. In case you didn't already know, an equalizing hitch, properly installed, does pretty much what its name implies; it tends to transfer some of the trailer's tongue weight forward through the vehicle's frame toward its front wheels.

Extremely effective in controlling trailer yaw (sway) and to avoid overloading any tow vehicle's rear suspension, especially when the tongue weight is fairly high, an equalizing hitch would seem to be a must for a front-drive tow vehicle. They aren't cheap items by any means, ranging from about \$130 to over \$200 (plus installation), but even that seems a minor investment to protect several thousand dollars worth of tow vehicle and trailer.

Air shocks, to help keep the front end down and the rear end up, were also recommended by some, but other sources felt that special shocks are not needed if the equalizing hitch is doing its job.

Honda does not recommend towing with its vehicles, despite this publicity picture showing otherwise. Your car warranty may be voided if you don't follow the manufacturer's towing recommendations; this applies to front drive as well as rear-drive vehicles.



Among the new models in the trend toward front drive are these Chrysler minis, the Plymouth Horizon and Dodge Omni. By mid-1979, GM will add four new compacts to the front-drive population, and that means more special towing arrangements are called for.

On the other hand, the use of air shocks without the special hitch could do the job, provided the tongue weight is low and the trailer is properly matched to the car's size and weight. George Nield, of the import dealer's association, felt that the extra sway-control capabilities of an equalizing hitch was not necessary so long as the length and weight of the trailer are in proper proportion to the tow vehicle's length and weight. He emphasized, however, the importance of checking with the car manufacturer and insuring the hitch you do use is specifically designed for that particular vehicle.

The use of bumper hitches, especially on modern smaller cars, is definitely not recommended, since bumpers are no longer designed to withstand towing loads. Instead, the hitch should mount to the car's subframe or some other high-strength component. Specific hitches may prove difficult to locate for front-drive cars because there hasn't been much demand for them in the past. But one tip is to check with Ideal Manufacturing in Oskaloosa, Iowa; which is said to have custom-designed hitches for almost anything on the road. Reese and Eaz-Lift, on the other hand, are two well-known names in equalizing hitches—check with your RV dealer.

Max Todd, of the Family Motor Coach Association feels that the only presently available front-drive cars suitable for towing even medium-size trailers are the big Eldorado and Toronado, and those need an equalizing hitch and probably air shocks as well. Above all, he warned, the hitch and the trailer tongue must be parallel to each other as well as to the ground, and varying pressure in the air shocks allows you to adjust the vehicle's rear height accordingly. Never should you allow the car's rear end to sag as that can lead to separation of the tongue from the ball as well as extreme cross-wind instability—in other words, you're liable to lose your trailer or find yourself spinning merrily off the road! Properly equipped, however, the Toro and Eldorado (1978 versions) are rated at 4000 to 6000 lbs. towing capacity.

Needless to say, anyone planning on towing with any sort of car should order the car with heavy-duty towing equipment if possible. This should include extra engine cooling capacity, a transmission oil cooler, perhaps an



engine oil cooler, and stronger springs, shocks and stabilizer bars. Such planning is becoming increasingly important as domestic cars are downsized because beefed-up frames and other components—impossible to add after the car is built—are also usually part of the towing package.

Unfortunately, there is not yet a towing package available for Chrysler's Omni and Horizon, and few (if any) imports offer one. This means that only the smallest trailers can be towed with these cars and that auxiliary engine cooling, at least, must be added after purchase.

Also smaller cars, whether front-drive or not, should be ordered with manual transmission (particularly if the trailer weighs more than 1000 lbs. or the car's engine puts out less than 100 SAE net horsepower) and with whatever heavy-duty suspension components are available. If you can't buy the car with any heavy-duty parts, it's usually no problem to find

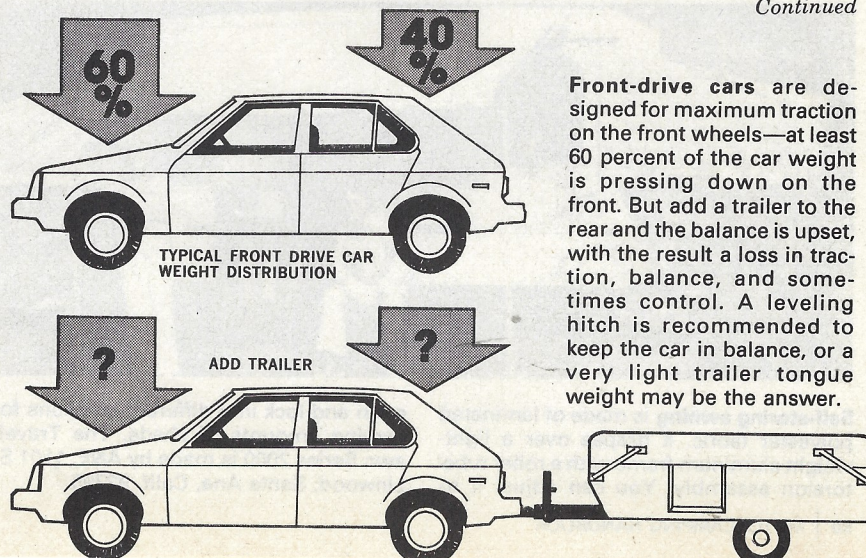
beefed-up springs, shocks, and stabilizer bars on the aftermarket.

Installing the best available brake linings is also recommended, particularly heavy duty pads for the front disks. Engine oil coolers are available at most auto and RV parts stores, and transmission oil coolers are cheap insurance for an automatic transmission.

Now the good news: more and more trailer manufacturers are building lightweight, compact trailers designed for use with small cars with or without front drive. Trillium and Bowler trailers are built in Canada specifically for small cars, and Jay-co has a small 950-lb. model. Coleman's Concord is a good lightweight model and another we know of is the small clamshell - design Compact - Kamp unit, which has a maximum loaded weight of 1000 lbs., tongue weight ranging from 35 to 90 lbs. and a very small frontal area.

We found that car sales people and

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Towing with front wheel drive

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dealers often will say there's no problem towing with front-drive cars, but the manufacturers themselves sometimes take a different attitude. While the importer has no official policy, a Datsun spokesman said he didn't recommend towing with the front-drive F-10 model. Honda used to recommend a 100-lb. tongue weight and 100-lb. maximum trailer weight limit for its Civic, but now says that its new-car warranty will be voided if any towing at all is attempted.

On the other hand, VW's Fran Doerr said that the Rabbit can tow up to 885 pounds without trailer brakes and 1800 pounds or more with brakes on the trailer, while the larger Dasher's capacity is somewhat higher. However, he recommended strict attention to what's stated in the owner's manual: distributing loads evenly so as not to cause excessive tongue weight, shifting to a lower range gear for climbing and descending hills and changing oil more often in both engine and transmission because of the added load and heat.

Tom Jakobowski at Chrysler said there is no official policy or warranty limitation on towing with the Omni/Horizon for 1978, but that more information should be available in '79. Another Chrysler source felt that towing with those cars should be limited to nothing larger than a 200-lb. tent trailer, and he didn't recommend even that.

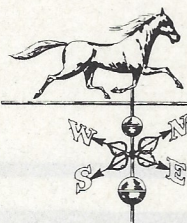
What emerges out of all this is that towing with front-drive cars, particularly small ones, can be tricky business. But if you pay attention to warranty limitations and load recommendations as specified in the owner's manual, you should have no problems hauling very small units. Cooling, frontal area of the trailer, and load distribution are extremely important with small tow cars, whether front-drive or not, and load distributing hitches and/or air shocks are required except with the tiniest of trailers. You should check with trailer people about hitch usage, since very light trailers could have their tongues broken or damaged as a result of the extra downforce imposed by equalizing hitch bars.

As a general rule, don't try to tow anything heavier than the tow vehicle, and look for trailers with small frontal area as the wind drag on a large profile trailer can be tremendous. And remember that auxiliary equipment such as coolers for engine oil, water, and transmission oil are lot cheaper than broken engines and transmissions. □

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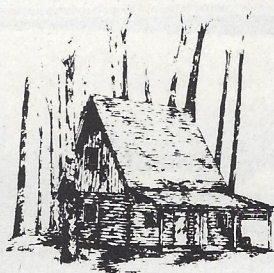
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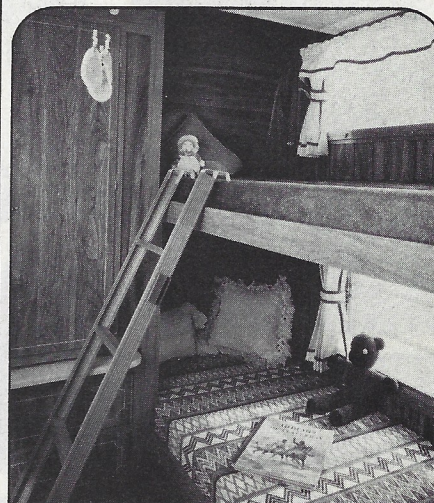
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