

Trailer Towing Gear Selection for Maximum Fuel Efficiency

Contemporary tow vehicles frequently have a four speed automatic transmission. The change from the older tow vehicle's three speed transmission (perhaps with an extra overdrive gear) to an actual four speed transmission was made by the manufacturers to generate maximum fuel efficiency in all their vehicles. But maximum fuel efficiency gearing may not generate enough torque (power) for moderate to heavy trailer towing.

Owner's manuals offer suggestions on trailer towing procedures specific to the particular manufacturer. A typical General Motors Chevrolet Suburban or Tahoe transmission selector will show PRND321, with D or "Drive" being selected for use of the four-speed automatic to give maximum miles per gallon when not towing. General Motors owner's manual suggests towing heavy trailers in an electrically actuated "Tow/ Haul" gear or in 3. It has even been suggested that the best gas mileage will be achieved in Tow/Haul or 3 when towing. Either of these gears will give *more power by increasing RPMs and torque* while depending less on transmission shifting. Of course the manufacturers are not paying our fuel bills!

If you don't take their suggestion and try to do heavy trailer towing on non-level roads in D, the transmission may "hunt" or shift back and forth from D to 3, resulting in an increase in transmission fluid temperature. That increase shortens fluid life with consequent damages to the transmission in the long-term.

It may be possible to tow in D on level roads and not harm the tow vehicle! But there are many variables that enter in when choosing whether to tow your Airstream in D or the Tow/Haul gear. Variations in engine size, engine type (gas or diesel), total rig weight, and rear end ratio must be worked into the equation. To maximize fuel economy and still avoid potential damages to the transmission, it is important to monitor that the transmission does not hunt from one gear to another, and that the transmission temperature gauge stays between 180 and 210 degrees. But can a driver actually decide which gear is most efficient to use on a level road without equations?

A fellow Airstreamer suggests towing down a level highway in Tow/Haul with the cruise control on. He watches the tachometer while he shifts the transmission from Tow/Haul to D. He suggests there is a **fuel savings when the RPMs drop**. He feels that fewer RPMs equal more miles per gallon.

But **Larry Jones, WBCCI # 9805**, disputes that suggestion. He points out that towing up a long grade while pushing harder and harder on the fuel, with speed and RPMs dropping is not efficient. When the transmission shifts to a lower gear the speed and RPMs increase and there may be a need to back slightly off the throttle to maintain the constant speed that you were doing before the transmission down-shifted. So a downshift to a lower gear ratio where **RPMs increase is more economical**.

Larry's assertion is that efficiency is indicated by fuel flow from the throttle while maintaining a constant speed on the road. He suggests towing on a level road at a constant speed on cruise control in Tow/Haul. Watch the throttle to see (or keep a very light foot on the throttle to be able to feel) what occurs after manually shifting from Tow/Haul to D. If you see or feel the throttle pedal go down, the new gear is less efficient for towing and your towing should be done in Tow/Haul. On the other hand if you feel or see the throttle pedal come up, the D gear is more efficient for towing and your level ground towing should be done using that selection. Tow/Haul gear is still recommended for non-level towing!