

## CONTROVERSIES IN TSE

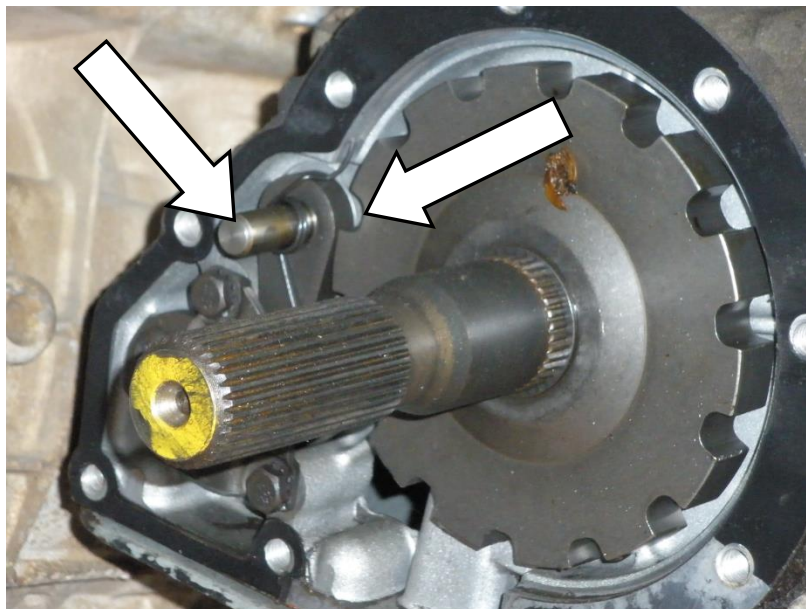
By Dave Slipp (TSE Representative 113, Tumwater)

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### Issue: Should Securing and Un-Securing the vehicle

What is the correct order for securing and un-securing a vehicle to put it in motion or to park it? What is the best practice for correct mechanical operation? What is the best practice for teaching/safety? I consulted Transmission and Brake Specialists, text books, the internet, owner's manuals for several vehicles and some of my esteemed colleagues. The text books tell the driver to shift to PARK first, and then set the Parking Brake, but provide no justification. The experts and owner's manuals say to set the Parking Brake first then shift to PARK. Only the text books address Un-securing the vehicle, again by shifting first.

Below is a photo of the Parking Pawl (arrow on the left) and the notched wheel that it engages when you put an automatic transmission in Park. This transmission is from a full size 2002 Ford pickup. This one is slightly larger than most passenger vehicles, but each vehicle is different. Notched wheel is about six inches in diameter.



All sources other than the text books tell the driver to set the Parking Brake first so as to not put the vehicle's weight on the parking pawl causing the transmission to become locked and unable to shift out of Park. However, the Parking Brake must be set fully

(tight) to hold the vehicle in place. According to Alex Hansen the Drive Right 11<sup>th</sup> Ed and AAA's How to Drive have changed the procedure and tell the student to set the Parking Brake first and then shift to PARK. I have previous versions of those two texts.

### **Issues:**

The Parking Brake is connected to only the drum brakes in the rear by a steel cable, even if you have four wheel disk brakes, there are small drum brakes inside the assembly.

Most people do not even use the Parking Brake, much less set it fully. **We must teach students to set it fully.** Does this put stress on, or stretch the cable, maybe some, but compare a \$100 cable replacement to a \$1-3,000 transmission repair. If the cable stretches, which it will, there is an adjustment to tighten it. That comes from the Transmission and Brake Specialists.

**Several times you never use the Parking Brake:** When the temperature gets close to freezing, the metal parts are much colder than the outside air and moisture in the inside will freeze them locked—very expensive. If the vehicle is going to set for some time, the moisture will cause the Parking Brake components to rust, again a very costly repair. It does get cold and moist in Washington State. This comes from the Transmission and Brake Specialists. What do you do in these situations? You use a wheel chock, a large rubber or metal piece that goes in front of or behind the tire to keep the vehicle from moving.

**A note from the Transmission and Brake Specialists:** When there is a parking curb, the cement bar at the front of a perpendicular parking space. Some people put the tires against the curb and secure the vehicle. They are unable to get the transmission to shift out of PARK and end up with an expensive service call.

By not setting the Parking Brake FULLY the weight of the vehicle will be put on the parking pawl and you will probably not be able to shift out of PARK. This causes damage to the parking pawl and the notched wheel leading to an expensive repair. This is especially important when parking on a hill.

I have used the technique of shifting to PARK first, then setting the Parking Brake. Included in teaching this is to keep hard pressure on the foot brake until both steps are accomplished. The Transmission and Brake Specialists told me that would serve the same as setting the Parking Brake first.

My concerns are: When we say secure the vehicle, you want to make it so that it will not move. 1. If the student accidentally hit the accelerator with only the Parking Brake set the car probably would move, possibly causing a dangerous situation. 2. When the student sets the Parking Brake first, they get a false sense the vehicle is secure and take their foot off the foot brake before shifting to PARK, defeating the purpose.

The Transmission and Brake Specialists stated as long as the foot brake is held down either procedure would be good practice. The main thing is to keep the vehicle weight off the parking pawl.

**Un-Securing:** Only the text books address this issue. They direct the student to shift to DRIVE or REVERSE first and then release the Parking Brake. On a hill if the student releases the Parking Brake first and does not push hard enough on the foot brake, or releases pressure from it before shifting, the vehicle's weight would be transferred to the parking pawl.

My recommendations:

Teach students to keep firm pressure on the foot brake until both the Parking Brake is set and the transmission is in PARK. Either order works if taught correctly and teach them why.

Un-Securing: Shift first then release the Parking Brake again keeping firm pressure on the foot brake.

Drive Right 10<sup>th</sup> Ed.

Responsible Driving, AAA.

License to Drive 2<sup>nd</sup> Ed.

Propulsion.

Alex Hansen, Eatonville SD, WTSEA Membership Secretary.

Arnie Robinette, Retired Arlington HS TSE

Gerry Apple, ESD 113 Driving Instructor, WTSEA Coordinating Secretary.

Mike Shephard, Lake Stevens SD, WTSEA President.

<http://www.WikiAnswers.com>

Lloyds Automotive & Transmission Specialists, Olympia. WA.

Brian McLee's Automotive, Olympia, WA.

Owner's Manual, 2002 Chevrolet S-10 Pickup.

Owner's Manual, 2011 Honda Civic.

Washington State Curriculum Guide 1995, Mod 2, 2.1.1 & 2.2.3