

PULLING A TRAILER THROUGH THE ROCKS

These are some recommendations for towing off road based upon observations made on the Rubicon trail in California. Note that trail conditions, terrain, tow vehicle and driver skills vary and this is not meant to be the definitive "How to" guide. Driving off road and trailering require great caution and pose potential serious risks to vehicle, occupants and trailer. Know your limits.

BEFORE:

- air down tires to less than 10 psi (based upon a 35x12.50x15)
- get center of gravity as low as possible (heavy items packed low in trailer body, 60% forward of axle, 40% behind)
- remove jack
- check hitch for tightness, obstructions underneath
- no exposed wiring, check brake lights
- rear tow point
- side 'flop' extraction points
- spotters line (and place to connect them)
- rock lights / reverse lights
- remove all excess weight
- check trailer brakes, with the vehicle and manual control
- brakes should be able to lock up when using manual control around 15-25 mph
- braking should be even between the two sides
- brakes should not lock up on dirt when using vehicle brakes at 3-7 mph
- tilt side mirrors down so you can see the tires of the trailer
- make sure safety chains are attached and out of the way. Make sure they can extend while turning without breaking

-STEEP CLIMBS:

- if you think traction is an issue, lock the vehicle axles before you start the climb
- front tires up slowly, rear tires may need a 'bump', trailer tires up slowly
- if the climb is consistent, keep momentum consistent
- if the climb has rocks or cracks, proceed across them slowly, while keeping momentum as needed
- choose your 'line' diligently, as you may not have a second chance.
- off-camber is not as crucial in a climb, but should still be considered if it is excessive
- anticipate your route 50 feet in advance, in order to position the trailer for the next obstacle

-STEEP DESCENTS:

- use engine compression whenever possible
- toggle the brake to keep the speed slow enough so the trailer does not bounce
- if the drop is off-camber, use a spotter line
- use the trailer brakes where needed (not in a sliding situation)

-TIGHT TURNS

- swing the vehicle wide enough to clear the trailer around the obstacle
- if the trailer is too close to a tree or rock, stack rocks or other objects next to the obstacle. When the trailer approaches, the tires will climb the stacked rocks and tilt the trailer away from the obstacle.
- check to see how off-camber the turn is and act appropriately
- use the trailer brakes manually to make the trailer turn SHARPER than the vehicle, when needed.

-OFF CAMBER

- this is perhaps the most difficult of challenges when wheeling with a trailer.

-DROP

- if the drop is larger than half of the size of the tire, use a spotters' line on the opposite side.
- if possible, drop both trailer tires off at the same time
- if the trail is next to a drop off, use a spotters line
- PROCEED SLOWLY!!!! Let one tire drop off slowly, and then the opposite tire. do not increase speed between the two tires dropping!
- check the obstacle for the possibility of a slide. If one tires drops and then slides, the trailer WILL flop.

-TURNS

- proceed as slowly as possible.
- if the outside of the turn has a berm, use it to keep the trailer level.

-SPOTTERS' LINE (winchline.com)

- have two ready, or wrap one for use on both sides (trailer can switch leaning directions very quickly)
- attach to strong point. Anticipate obstacles on the side you are pulling, so you can keep a steady pull ALL of the way through the obstacle
- keep good communication with the driver, letting them know when to slow down for obstacles, for re-positioning of the spotters line, etc.

-BACKING UP

- use slow speed and small turns to avoid 'jackknifing' the trailer
- whenever possible, turn the trailer while still going forward to prepare it for the direction it needs to go in reverse.
- know how far you can back up before the bumper of the vehicle comes in contact with the tongue of the trailer
- be aware of the camber of the trailer before you back up, and if the camber will be greater or less as the trailer continues to back up.
- have reverse lights mounted on the trailer to help with visibility at night.
- make sure the area is clear of people before backing up.
- use the trailer brakes manually to make the trailer turn SHARPER than the vehicle.

-TROUBLE SHOOTING

- trailer keeps flopping
- driving too fast!
- too high tire pressure
- too high spring rate/torsion rate/air bag pressure
- center of gravity too high
- brake setting too high

Just to reiterate what has been said here, the number one cause of problems towing off road is driving too fast. Trailer suspensions, even independent systems, do not drop out like vehicle suspensions because there is a pivot point between the vehicle and trailer.

For reference, In wash board and rock crawling conditions, I generally air down my LT 33 x 10.50 x 15 trailer tires from 30 psi (highway) to 15 psi. Once back on the paved road, tires pressures must be restored to highway pressures.

...and of course, practice, practice, practice...learn the characteristics of how your trailer handles before you put yourself in difficult conditions.