

## **Defender Caney Carnage**

by

Jon Turner

[pugsly@bechange.com](mailto:pugsly@bechange.com)



Trail accidents and the resulting carnage are part of off road adventuring. Nobody wants or expects it to happen, but there is a certain inevitability to it – the more you off road, the more you push your skills, the more time behind the wheel in dirt – someday you may have a rollover or other serious accident.

I recently had “my” rollover – and this is my attempt at capturing my thoughts on what happened, what worked, and what didn’t. This accident, like all others, was avoidable, but we’re all human and just because something is avoidable doesn’t mean it isn’t going to happen!

On the afternoon of Friday February 3<sup>rd</sup>, 2006 I was out in my Defender 110 (running 33” all-terrains with a locked rear and open front) driving the Caney Fork trail in Western North Carolina. The weather was cold and wet – there had been a lot of rain, there was pooled water on the trails, the streams were running full, and there were spots of snow lingering in shaded spots. A group of other Rover folks was planning on running the trail on Saturday, but I had come out a day early, planning on camping and meeting everyone else in the morning.

Caney Fork is a fun and generally not terribly difficult trail. There are a few obstacles that can provide a good workout, a short muddy climb to a bald just below the top of Caney Fork, and a long muddy hillclimb at the top of Caney Fork. Both climbs I had done successfully in the past, in drier conditions. However, on this day things were very sloppy. I tried the big nasty climb several times before giving it up as undoable in current conditions with my rig. I thought I should be able to do the smaller climb, and drove back down the trail to it.

The climb, though short was very muddy and loose. I was able to get my front wheels over the crest, but couldn’t bring the rear up – everything just spun. As I was spinning my wheels, the truck slid to the left, leaning me against the side of the climb with a large kerb of earth wedged under my left slider. I turned my wheels to the right, thinking that I could back off and straighten up, backing down the rest of the incline to the more level area below. In theory. What actually happened was the ridge of soil under the left slider lifted the front left tire as I slide backward, then dropped the front left tire several feet as I was sliding backward. Very quickly the whole truck slipped violently to the left, lifting the right side tires and then flipping onto its side in the middle of the climb.

Having been to a number of training courses in vehicle recovery, one lesson I remembered was “TURN THE ENGINE OFF IMMEDIATELY”. I had the engine off before the truck had come to rest – I believe this helped with the later recovery.

Resting on my side, with the contents of my passenger seat (including the bottom part of the passenger seat) resting on me, I took stock of the situation. Lots of little things had shifted, but all the big stuff was still in place. I made a mental note to make sure that the latch of my Engel was closed in the future, as all of the food in the fridge was cascading behind me, bouncing off the windows. I also reflected that they don’t make soda cans like they used to, as a number of them were not able to take the impact and burst open

spraying brown carbonated beverage over the interior of the vehicle that was to become my bed later that night.

After lying on my side for a few minutes, I decided that everything seemed stable and that it was time to get out and take stock of the situation. Climbing up and out of my passenger front door, I saw confirmed my initial assumption – yes, I had managed to roll my vehicle over at the top of a mountain trail. Alone and with darkness fast approaching. With no cell phone service. With freezing temperatures, high winds, rain, snow and thunderstorms forecast for that night (You think I'm joking about the weather, but I swear I had all that and more that night – the weatherman was right that time!)

Okay, first thing to do was get some gear out of the truck. Problem 1 – the station wagon door is hinged on the passenger side, and with a 33" tire mounted on it is quite heavy. Fortunately, I had 2 tent poles that I use for raising a tarp while camping, and was able to open the door and fish one out to use as a handy door proper-opener. It worked very well.

So I dragged my kit boxes out, and collected up all the food that had fallen – using my Engel's wire basket as a container for the food. I grabbed a towel and cleaned up the soda spray as best as possible in the circumstances.

Had a drink and a bite to eat and reflected on my situation – could I get this thing upright by myself, or was I stuck here until lunchtime tomorrow when I could expect my friends to reach the top of the trail?

What the heck, give it a shot, I thought. I pulled my recovery gear out of the truck (had to climb on top and reach in through the rear passenger side door) and surveyed the situation. I had a good 12000 pound winch with synthetic line, and dual Optima batteries. Should be able to pull it upright if I could rig it. Problem was, there were a lot of small (2-inch diameter or less) trees and the ground was very wet, so probably not a good anchor anywhere near. Also, the winch was on the front off the truck and I really needed to pull from the side. I had one snatch block, and chained that to the undercarriage by the top slider, but really I should have used two to get the right approach. As a result, I pulled the winch line across a metal edge and broke it in very short order. I can attest that synthetic line works as advertised – it pulled back a total of no more than 3 feet before dropping to the ground.

With the winch line broken and darkness fast approaching, I decided it was probably best to prepare to stay until morning. I built a campfire and sat beside it for a few hours, reflecting on the day and how to best recover the truck the next day.

I didn't have a tent with me, since I had planned on sleeping in my roof tent. With the truck on its side that was no longer a sensible option, so I decided the only thing for it was to sleep in the truck, which meant actually sleeping on the windows at about a 20 degree angle. Not the most comfortable of options, but with fierce weather forecast I had no doubt that it was the best available.

With harsh winter weather forecast, I had doubts about the ability of my Defender to stay water tight on its side. Lets face it – they aren't that watertight with the wheels pointing down, let alone to the side. I always carry a large tarp with me for sheltering the campsite from rain or sun. I stretched the tarp across the side (which was now the top) and bungeed it in place, yielding an effect similar to a body covered by a tarp at a crime scene.

Since the Rover was lying at a pretty good angle from front to back, sleeping on the inside of it was not going to be comfortable. I ended up putting one of my kit boxes back inside, and using it as a shelf that I could kind of sit / lie on in my sleeping back. I didn't have a comfortable night, but I did sleep quite a bit. There were tremendous winds, thunder, lightning, hail and rain – but the tarp held and I stayed dry!

The next morning, I woke up and after having a bite to eat decided I was too cold to just sit around waiting for hours in the rain and snow. I thought I would stay warmer and kill time if I walked down to the trail head (a couple of miles) and met my fellow Rover buddies there so I could ride back up the trail with them. It took a few hours, and I met a Forest Service crew out clearing roads (cutting back deadfall, etc). I talked with them a while, and I think they would have made the effort to help me out, but I decided I would probably be better off if I did the recovery with people I know and whose skills I trusted.

I continued hiking down the forest service road, until I met a surprised Aaron Owens in his well equipped Discovery II, followed by Scot Haberman in his lightweight and Kirk Pinska in his Discovery I. They were wondering why I was walking and not driving – I told them that I needed a bit of help getting my Defender back on its wheels!

We had an uneventful climb to the top of Caney Fork, strapping the lightweight once. At the top, after a pause for everyone to take the necessary pictures of my Defender on its side, we positioned for recovery.

Recovery – After a little adventurous driving of his own, Kirk moved his green Disco to a position above the Defender. With him facing away from the front of the Defender, we strapped from his receiver shackle to one of the two Dixon-bate pins on my ARB bumper (passenger side). Aaron positioned up the trail on the underside side of the Defender at a position where he could provide a straight pull from his 8274 winch. We used 3 10' lengths of chain (I had 2, Kirk had another) to anchor the rear of his Disco II to a clump of trees to stop the Defender from pulling the winching vehicle forward. Aaron valiantly dragged his winch cable all the way through a large thicket to the Defender, through a snatch block, and back to his bumper. I had threaded a large recovery strap through the top of my roll cage, to provide an optimum pulling point. The two ends of the recovery strap were shackled to the snatch block and we were ready to begin the recovery operations in earnest. Scot was appointed the chronicler of the event and given a video camera.

The recovery concept was – Aaron would winch the 110 back up on its wheels, but it would still be at a very high angle because the passenger side wheels would be up against a bank. Kirk would stop the Defender from rolling backward by anchoring it with his Disco. Once Aaron had the Defender winched into position, Kirk slowly backed down toward the truck, allowing it to slowly roll back onto level ground. The actual recovery operation went very smoothly and exactly as scripted. Pulling a 7000+ pound vehicle up from a layover is not to be taken lightly – things can go wrong quickly, and once inertia takes over there's not a lot you can do except stay out of the way. A combination of planning, the right equipment, and the right people made this quite technical recovery seem very easy.

What was the damage? The only broken glass was the drivers side mirror (not the first time that had been broken). The drivers door handle was busted (not the first time I had busted a door handle either). Pretty good dent in the drivers quarter panel, a small hole in the drivers door, couple of good scrapes and gouges in the safety devices cage, and the mount for one of my Hella lights was tweaked so that it was pointing directly down at my wiper. For a rollover, the damage seemed surprisingly minimal.

Back on 4 wheels – but will it start? So many things can happen when the truck is on its side, and mine had been that way for over 20 hours. Fluids leaking out. Fluids moving to strange and different places inside the engine, transmission, transfer case. Batteries dying. Cylinder bores filling with oil. Vapor lock. Loss of prime. Air pockets in the cooling system. All this and more.

First things first, will it crank? I knew the most prudent thing to do would be to pull all the spark plugs, but I had enough confidence in the engine to bypass this step. I pulled the coil wire and cranked the engine – it turned over, easily. Great stuff, dual Optimas! After dry cranking, time to see if it would fire. Yes, in a cloud of white smoke the engine started – with great squeals and no charging from the alternator. More concerning was very very low oil pressure. I could see the gauge move so there was some pressure but not enough (judging by the rumbling coming from the engine). I poured a quart of oil into the passenger side head (since it had been on top and likely had no oil in it). At this point, we decided to leave the Defender in its newly upright position and explore the area trails for a bit.

Another reason for continuing on up the trails - I knew that there was an area very close to the Blue Ridge Parkway and I wanted to call Larry at RCH Automotive and ask him about the oil pressure problem. We explored the very top of Caney Fork and made the (walking) connection along the Mountains to Sea trail to the Blue Ridge Parkway, where we saw that the road was closed due to a rockslide within sight of the trailhead. I had always wanted to make the connection from Caney Fork to the Parkway, and now I knew it could be done, though not in a vehicle for the final hundred yard or so.

The good news was that I was able to get Larry on my cell phone and talk about Rover engines losing their prime. On Larry's advice we decided that since there was minimal oil pressure that it probably was not a priming issue – in that case we would expect to see

zero pressure. Larry suggested that since the truck had been on its side the sludge from the oil sump may have fouled the strainer on the oil pump suction pipe in the sump. That sounded reasonable, and the fix was to drop the sump, clean and reinstall. An easy shop fix but not so fun in the snow/freezing rain. However, I was optimistic that given sufficient time the sludge might return to the bottom of the sump, freeing the strainer. When we returned to the Defender I tried starting it again, and the oil pressure came right up! This made us all very happy, as none of the group was looking forward to a trailside sump cleanout project.

I had a lot of smoke, rocker noise, and other engine noises – but I did find when I revved the engine I was able to get the alternator to stop screaming and start charging. The general consensus (which I agreed with) was to drive it and see if the engine quieted down some, now that I had good oil pressure. I also agreed that if the alternator decided to let go then so be it, but I wasn't going to worry about it – I knew I could make it home on my dual batteries if need be.

I headed off down the trail, and after a few minutes the engine had quieted right down and the tailpipe had stopped smoking. We had planned on camping that night, but by then I was ready for a hot meal inside a building, and after sleeping on the interior windows of my 110 that night I was ready for a real bed. We uneventfully exited the trail and grabbed dinner in Sylva after a little shopping at the local Wal-Mart Supercenter (where Scot had parked his tow rig). Scot, Kirk, and Aaron drove back to Concord, but since I had a longer drive (and had had a long day) I decided to grab a hotel room close by. I stayed at “The Lodge” in Waynesville, NC – I can recommend it as the best \$39/night hotel I have ever stayed in.

The next day, I uneventfully drove the remaining 270 miles home.

All in all it was a great weekend Roving!

**BEFORE YOUR ROLLOVER** – Be very sure that everything is secured, everywhere in the vehicle. You don't know which way things are going to go, and you don't want them hitting you – trust me, going over on your side is bad enough.



- Probably the most important – have good, sane Roving friends who can help you out. This should most certainly include your mechanic so you have someone competent to talk to when you need to figure out why you aren't getting oil pressure after recovery, etc. I was wheeling alone, but I knew I had friends coming up the next day.
- Secure everything. I know, you did this already to stop things from bouncing around, but ask yourself if those lids are going to hold on their side, etc. Bungies are your friend for light stuff, ratchet straps for big stuff. I have a couple of aluminum racks bolted into my loadspace to contain things and also provide a good mounting point / strapping point. They proved their value in this accident.
- If you are driving solo, avoid the temptation of leaving things in the passenger seat. Fortunately I didn't have anything that heavy or pointy there, but a bunch of stuff did fall on me.
- If you are driving solo in a Defender, consider securing the passenger seat bottom with a bungee so that it won't fall on you. Not worried about the seat? Try this – lie down on the ground and have a friend drop a Defender seat bottom on your head from a height of several feet.



- If you have a fridge, latch it or all your food will fall out. I have an Engel fridge in a slide mount. The slide mount did a great job of holding the fridge in place, but the food all fell out. Same rule if you have a cooler, make sure that the top actually latches and is not just held closed by friction.
- Keep the doors unlocked, all the way around including the rear. It will be difficult enough to get at your recovery gear, etc, without having to wrestle with door locks.
- Use gell-cell batteries. The last thing you want is battery acid everywhere. Especially if the battery is under your seat. I have dual Optima red-tops (Costco rules) but there are other good options.



- Know where your recovery gear is and have it positioned where you can access it. I would not have been able to access my recovery gear if I had flipped onto the passenger side.
- Have the right recovery gear for self recovery. I believe I could have done a self recovery if I had two snatch blocks. I was

- Be sure that your fuel cans (and other fluid containers) will hold up on their side. One of my roof mounted jerry cans was one of the first points of impact and it held up.
- FINALLY – Secure yourself. You went to a lot of effort to stop things from breaking loose and hitting you, so return the favor. Buckle up so that you don't break loose and hit other things!

#### DURING YOUR ROLLOVER –

- If your window is down, get your arm inside the vehicle! You won't be able to stop the vehicle from rolling with your arm, and broken bones will decrease your odds of a successful self-rescue.
- Turn off the engine! You're going to want to be starting it again, and the less it runs at an extreme angle (like 90 degrees from horizontal) the better!
- Sit tight and wait for everything to stop moving. Forget all those movies about vehicle balancing on the edge of a precipice – that's not happening to you.

#### AFTER YOUR ROLLOVER –



- Get out. Walk away. Sit down and drink some water, eat a candy bar. Even the coolest head gets shaken up by a rollover, hasty actions at this point will probably not be helpful!
- If the vehicle is stable (and it probably is), grab gear out of it. You probably have a box of spare parts and fluids – pull it out so that it doesn't leak all over the place.

- Alone – decide if you can self recover safely! Righting a tipped vehicle is a dangerous operation, and doing it alone is dangerous. You may be able to, but decide if it is worth it. I didn't injure myself attempting self recovery, but I did break a synthetic winch line.

#### AFTER RECOVERY –



- Resist the temptation to immediately start the vehicle – you have things to do first!!!
- Visually inspect the vehicle, assess damage and look for bent / broken drivetrain and steering components.
- Check all the fluid levels.
- If you don't have gel-cell batteries check the batteries – they may no longer have acid in them.
- Top everything off.
- Consider adding some oil to the cylinder head bank that was on the high-side – all that oil probably drained out, this will help to speed the relubrication process.
- Remove the spark plugs, clean them off, and crank the engine a few times with the plugs out. I admit I didn't do this and everything seems to have survived, but that is the recommended procedure.
- Disconnect the ignition coil / distributor / coilpack – whatever your truck has that makes spark. Crank the engine for 30 seconds a couple of times.
- Connect what you disconnected so that you can make spark again. With a buddy listening under the bonnet, start the engine. Don't look under the hood – your buddy will yell at you if something isn't right - your only job is to watch your oil

pressure gauge. If it doesn't move at all, you've lost your prime and have a lot of work ahead of you, shut the engine off and get to work troubleshooting. If you get a little pressure but not anywhere near normal, it is possible that the sludge in the sump is obstructing the intake and will clear if you let the truck sit in the normal upright position for a while. Turn off the engine and wait, an hour if you can stand it, then try again. If you can't get the oil pressure to come up then you have to drop your oil pan and clean the sump – and none of us are in a hurry to do that so give it time.

- A lot of smoke out the tailpipe and chattering from the engine is normal at this stage. If you have oil pressure, with luck it will all sort itself out in a few minutes. Who knows, a nice bouncy trail ride might help it lubricate!