

The Truck Who Would Be King

(with apologies to Rudyard Kipling)

The Scale 4x4 RC 1.9 Ford Shootout!

Starring the Tamiya F-350 Hi-Lift

By dremelit

The new Tamiya F-350 Hi-Lift has finally arrived, after much anticipation. But how good is it, really? The Scale4x4RC staff put the new truck through its paces alongside the tried and true XC chassis, an offroad TA02, and a home-brewed TLT, all wearing Tamiya Ford hardbodies and 1.9 tires. Can the F-350 steal the crown from the XC? Read on and find out.

And now, let us introduce the players:



The new kid, the F-350 Hi-Lift, biggest and heaviest of the bunch, easily the most expensive, packed full of 3-speed, diff-locking goodness. How good it is we'll see shortly. Power comes from a Novak Crawler brushless system.

The TA02 with modified Blackfoot body, rolling on BFG's. Powered by a Johnson 540 can motor.

The XC (short wheelbase) with King Blackfoot body, on cut Goodyears. Powered by a 55t lathe motor.

Representing the homebrew TLT/Pede contingent, I'll run the TTB rig. Not a perfect representative, as its IFS and 1.5 inch tires are outside the norm for most builds, but I built it and it's time to see how it stacks up. I've changed out the original Sand Blaster tires to some vintage Kyosho Option House Dunlops. It's powered by a Tamiya silver can 540.

All the rigs will run six cells and hardbodies, and be compared in "as is" configuration. No special prep will take place. This means the TTB will be handicapped by its open diffs and on-road gearing. This is not, however, a crawl-off, so it may not be the worst thing in the world.

The Testing Begins

In the words of Confu Salem, as translated by Billy Fish:

“Now we shall see.”

(those of you who don't read Kipling (shame on you, read The Man Who Would Be King, or at least buy the DVD. They're both all-time greats.) won't know what I'm talking about)

The tests were conducted at my state-of-the-art facility, aka my back yard.

The driveway has room for a 132 foot drag strip, or a 1/10 scale 1/4 mile. All of these rigs are pretty fast by 1:1 standards.

The next test was a climbing angle test, using a sheet of MDF with an old doormat nailed to it. The steeper the better. The results will shock you.

A turning-circle measurement followed. At first I tested the F-350 with its diffs locked. Since the diffs are lockable in the field, it only took a few minutes to remove the pins and unlock them, and tested again with open diffs. All others were tested locked, except the TTB, which is open anyway.

Next we did some jumps, just to see how they all flew. The MDF was laid over a Ryobi orbital sander's carrying case, which provided an 8-inch launching pad. I didn't check for distance, only for flight characteristics.

Following that, a general on-road behaviour analysis, and a general off-road behaviour analysis. On-road was conducted on the drag strip/driveway, at varying speeds, just

driving around wherever I felt like. The trail went around the garage to the rock crawling area. The garage sits about 18 inches from a fence, and that area is filled with leaf litter and prickly balls from a neighbor's tree, lots of them. A few twigs and a tall grassy area that I can't mow and am too lazy to weed-wack provided an additional challenge. A bit of romping around in the gravel beside the garage recorded some additional high-speed offroad characteristics.

Finally, the rock crawl. Yes, I'm leaving it for last. If you don't know that I'm a big fat tease, welcome to the board.

Artic-O-Rama!



The TTB homebrew managed two skinny tires, about an inch and a quarter.



The TA02 managed to roll a fattie, just over an inch.



Two fatties for the XC, or two inches. I thought this was going to be the articulation champ of the day, but I was mistaken.



Two fats and almost a skinny from the F-350. Call it two and a half inches. The big guy likes to show off.

Scoring: For each test, the winner was awarded four points. Next in line got three, and so on. A perfect score would have been 28 points, acing each of the seven tests.

What a Drag!

With fresh packs, I decided to give every truck one run up the drag strip. I measured off 132 feet with a steel tape, and recorded each time by counting out loud. Yeah, real precise, but it's hard to drive and operate a stopwatch at the same time. Times are approximate.

F-350: Starting in second, it hooked hard and went straight, the only truck to do so. It threw down the gauntlet with a blistering 9.0 time. Like a big diesel with a lot of boost and some propane injection would do, but without the cloud of smoke. I thought I heard the tires chirp, but I was 132 feet away.

XC: 12.2 seconds, weaving a bit because only three wheels were on the ground. It hung the right front in the air for most of the track. The lathe motor hurt it in this phase of the competition.

TA02: 10.0, finishing on its roof. Could have beaten the F-350 if it had gone straight, but it didn't. Probably covered closer to 160 feet.



TTB: 11.1, not bad, but not the easiest thing to drive straight. Could have been better, but tracked straighter than the TA.

Overall scores:

- 1st place F-350 4 points
- 2nd place TA02 3 points
- 3rd place TTB 2 points
- 4th place XC 1 point

Time to break out the MDF and see how steep they'll climb.

The old welcome matt was nailed to the board and laid against a shelf that's been behind the garage forever. Varying the placement of the board changed the angle of ascent. A shorter measurement here means a steeper climb. The shelf is 15.5 inches high, so a measurement of 15.5 would be a 45 degree angle.

Stairway to Heaven

First up, the big guy. Its weight was an asset here, providing plenty of traction. First gear provided enough reduction to avoid wheelspin, and it climbed up until the board was 12 inches from the base. That works out to 58 degrees. That's pretty steep.



Next, the XC. Managed 15" with wheelspeed, again with three wheels contributing. The right front was airborne. 46.4 degrees.

The TA02 couldn't scale anything steeper than 20 inches. 35 degrees.

The TTB was the surprise of the day here. In spite of open diffs it managed 14 inches, but wanted to tip over backwards due to its battery placement. 49.8 degrees.

Scores:

F-350, 58 degrees, 4 points

TTB 49.8 degrees, 3 points

XC 46.4 degrees, 2 points

TA02 35 degrees, 1 point

Going Around in Circles

This is just a measure of how tight a turn the trucks can manage, performed on gravel/grass. Measurement is for a full 180 degree turn, from outside wheel to outside wheel.



TA02 61 inches 4 points

XC 71 inches 3 points

TTB 72 inches 2 points

F-350 (locked diffs) 97 inches 1 point

(open diffs) 62 inches , 3 points

The locked-diff result counts toward the total, however, as the others were tested with locked diffs. You may feel that I'm being unfair. You may very well feel that way.

Edit: Pic shows an incorrect measurement procedure. Actual measurement was done from outside wheel to outside wheel, or the same wheel on both sides of the circle.

Yumpin' Yiminy!

While this will never be mistaken for an RCCA big-air contest, it does give some insight into how these trucks will perform as aircraft. I jumped each one 3 times to get a representative sample.

The F-350 flies nose-heavy, and lands hard on its brush guard, much like the Oldsmobile on the recent Mythbusters episode. Unlike the Olds, however, it drove away. Not the most satisfying thing to jump. 4/10. It's no stadium truck.

The TA02, if you can get it to drive straight at the ramp, loves to jump. It flies straight and true, lands on all 4 wheels and comes back for more. Its speed helps it here, as does its relatively light weight. 10/10

I thought the TTB would break, but it didn't. Slightly nose-heavy but not a bad flyer. 6/10

The XC could use more speed here. It's better balanced than the 350, but nowhere near the TA02. 6/10

Scores:

TA02 4 points

XC 2.5 points (tie)

TTB 2.5 points (tie)

F-350 1 point

On the Road (to Kafiristan)

Since all the rigs survived the jumps, it was time to give them some on-road running to let them recover.



The TTB, until today the reigning onroad champ: Smooth up front but bouncy in back. Its homebrewed roots show, but I love it. The steering needs some expo, as it's twitchy on center. The iwaiver transmitter doesn't have expo, however. It does have 10 model memories, and that's important to a guy like me. This is easily the most stable truck re: rollovers. You have to really try to make it happen. Its track width, I suspect, is to credit for that. 8/10

TA02- This one would be so much better without the hardbody. The combination of a high CG and narrow track makes it dangerously unstable at speed. I think it spent more time on its roof than on its tires. 3/10

The XC feels like a factory-built TTB. Much more refined, but more likely to tip, as it's not as wide and softer. It's fun to watch the right-front torque up on takeoff. 7/10

The surprise of the day here was the F-350. Quite civilised. A bit rolly at top speed, and it took a few corners on two wheels but never tipped. In its first outing (without the body, but with the coil springs in the dampers) it would roll over easily. I feel the softer springs help the chassis cope with the extra weight, rather than letting it heave over. Ties with the TTB for the most scale driving experience, but overall much more pleasant. Shifting gears is way too cool. Surprise! Locked diffs hurt your steering when driving on concrete. Removing the coils from the shocks smoothed out the ride greatly, and unlocking the diffs improves its onroad manners. 9/10

The scores:

F-350 4 points

TTB 3 points

XC 2 points

TA02 1 point

The Trail Turns Tougher

Here's where we find out how well they do what we want 'em to do :banana:

The trail wraps around the garage and leads to the rock crawling area. It's a short trail, but it covers grass, pricker balls, leaf litter, twigs, gravel, construction debris and a whole lot of other crap that you find on the ground.



First up, the TTB. Please lock my diffs! It actually outperformed the TA on some sections, but collected some grass inside the open axle housing, and got hung up on the pricker balls. 6/10

Next, the TA02, which really favors low-traction surfaces (read MUD!) and a carefree, balls-out driving style. It doesn't like going slow, and it's fun but not stable. I've dated this truck before. More ground clearance is needed, as it got hung up on the entrance to the

trail, and again in the grass at the back of the garage. Rolled over on the gravel sections. 5/10. I don't know why I like this truck so much, but I do.



The F-350 dominated the trail. No worries whatsoever. Nothing slowed it down. 10/10

The XC also took the trail, but rolled in the high-speed gravel bashing area. 9/10

Scores:

F-350 4 points

XC 3 points

TTB 2 points

TA02 1 point

Urgent Business in the South

And now, the rock crawl. Will the F-350 dominate the rockpile? Will it? Huh?

I reconfigured the rockpile from its 2.2 size and ran the XC over it a few days ago as a calibration measure. The XC could do it, so I used that as a baseline, and default 7/10 score.

The XC, as expected, performed decently on the rocks today and kept its 7/10. Soft springs and lots of suspension travel, as well as the lathe motor, helped it here.



The TA02 took the pile but not in style. It needs more of everything. Gearing, suspension travel, ground clearance, motor winds, etc. It made it over by sheer willpower. 5/10



The TTB was the surprise of the day. Its open diffs would be a handicap, I knew, and when it got hung up on the tuft of grass at the base of the pile I was about ready to call it quits. But I chose another line and got much farther than I thought before finally running out of traction. Basically made it to the top of the pile, where the towing bill would be highest. 4/10



Now, the one you want to see: The F-350:

Size matters. The extra width and wheelbase that help it so much on the general-performance sections actually hurt on the rocks, where breakover angle and diff clearance come into play. The F-350 got stuck on sections that the XC had easily cleared, and I had to back up much more than with the XC. The larger size does help stability, and the weight didn't hurt as much as I thought it would.



The next approach, I chose different lines and was able to clear the sections that had given me trouble before. With 4-wheel steering and larger tires, this could be a crawler, but not a competition crawler.

I rated it as a tie with the XC. 7/10 Perhaps that was a bit generous.

The scores:

F-350 3.5 points

XC 3.5 points

TA02 2 points

TTB 1 point

A Crown On His Head

Add up the scores, then.

The TTB comes in with 15.5 points. Not bad for a low-buck homebrew with open diffs, that was never meant to do much offroad in the first place.

The TA02, half a point ahead, 16 points. As good as it was on the trail ride this summer, I expected better numbers.

The reigning trail champ XC put up 17 points. An impressive show from the old guy.

But, the crown must go to the truck that took 21.5 points of an available 28, the F-350 Hi-Lift. It fell short in jumping and in the turning circle, and would have dominated that one had I fitted the 4WS.

However, 4WS would have made it much less stable in normal driving. It's a trade-off. I'll leave it locked out.

All hail the new King of the Trail!



A note on the Novak Crawler system:

This motor/ESC combo works beautifully in the Hi-Lift. There's low-speed control similar to an automatic transmission in a 1:1. You can creep along as slow as you like, and enough speed on tap that you're not making any compromises for it. The braking is nicely proportional as well. At no time did the motor or ESC get hot, or even warm to the touch.

Pricey? Yes. But so is the Hi-Lift. The only downside is that it won't work with the forthcoming MFU.

Thanks for reading!