



**BEN  
SCHAFER**

## The Anatomy of a Time Attack Car - Stage 1

The Real JDM is a monthly column written by Ben Schaffer of Bespoke Ventures. Bespoke Ventures operates a number of JDM related businesses including: Bulletproof Automotive, Top Secret III, Ings+1 USA, VARIS USA, HyperRev USA and Bespoke VIP. Visit [www.bespokeventures.com](http://www.bespokeventures.com) for more information.

**T**ime Attack - those are two words that you'll be hearing often in upcoming years. The concept is nothing new, but for the first time in America time attack is getting major attention from aftermarket manufacturers and tuners. The attention is rightfully deserved because in Japan the skill of a manufacturer or tuner is often judged mainly by their lap times at popular circuits like Tsukuba, which set the benchmark. As car enthusiasts in America continually become more educated on improving their cars, they are increasingly looking towards tuners competent in time attack because it showcases their

Time attack events are a direct result of a deep rooted core reason for tuning in the first place.

abilities at building a fully performing car that is balanced in all aspects of driving.

I like to think that the importance of time attack events are a direct result of a deep rooted core reason for tuning in the first place. I believe that all car tuning enthusiasts want to build their own supercar. Whatever your idol car is: Zonda, Enzo, McLaren F1, Carrera GT, GT-R Z-Tune or Koenigsegg, somewhere deep inside your mind you'd probably like to recreate that driving performance in a way that is more custom, more exclusive and more affordable. Think of how satisfying it'd be to beat up on an Enzo with a car that you built at a tenth of the price. I'm not talking about simply out accelerating an Enzo, I'm talking about beating it at every aspect of the quantifiable driving experience: Acceleration, braking, handling, stability, nimbleness, etc.

There is really only one effective way to benchmark test your own car so that you can confidently know that you were able to out-engineer your supercar rivals: You need to get it onto a complex track where the supercar rivals have already run a timed lap. The beauty of

time attack is that nearly all elements of sports car driving are accounted for, every ounce of automotive engineering is extracted to squeeze the shortest lap time possible, and when it's all done you can compare your time directly to your rival's time at the same track to see who truly has a faster car. It's a challenge that uses all of the car and all of the driver and requires extreme precision in both tuning and piloting to put a time in the record books.

So you want to build your car into a supercar? Let's dig into the anatomy of a time attack car. The key to time attack is balance and responsiveness. Building a car with too much of any one thing often will result in slower laps. For example, although 1000hp sounds awfully cool, it isn't much fun when a car with 400 less horsepower blows past you mid-corner. From the initial selection of the vehicle, to the selection of the tuning parts, to the setup of the tuning parts, balance must be considered at all times.

Anatomy starts with genetics. In choosing a base car, you want genes that represent athletics, not obesity. Building a strong



It's been proven time and again that 4WD cars are faster than FR cars for time attack because of the added available grip.

athlete requires a lot of training to be molded into a champion performer. While you can always build in more muscle and agility, it's a bad idea to start with a car that's big boned. There are some things you just can't fix no matter how much money you throw at them. With nearly no exceptions to my theory, do not plan to reduce the weight of your car by more than 35% of its stock weight. This is vital because a vehicle's weight for time attack affects every aspect of the car's performance from acceleration to handling to braking. If you're starting off with a car that weighs more than 3,500 lbs, it's going to be very difficult to beat cars that are 1,500lbs lighter than your car, even if you cut the weight back by my proposed theoretical maximum of 35% and get it down to a 2,275lb race weight. Keep in mind that 35 percent is an extreme circumstance max number and most

tuners can't come near that number even with \$100,000 investments in dry carbon parts and other modifications.

Also when choosing a car, consider what class you want to enter and ensure that the vehicle you select meets that criteria. It's been proven time and again that 4WD cars are faster than FR cars for time attack because of the added available grip. It's also no coincidence that the fastest tuner car at Tsukuba is an EVO and not a GT-R because it's possible to get the EVO lighter than the GT-R when both are tuned to the max. So, carefully consider whether you want 4WD, FR or FF and then choose the platform with the best opportunity for significant and balanced improvements.

It's important to know what can be modified and improved upon, and in reality nearly everything can be improved upon with enough

time and money. For example, a 50:50 weight distribution is advantageous for handling dynamics and it might be a common thought that a car with a natural 56:44 weight distribution by comparison to a 50:50 car is disadvantaged in time attack. However, in this scenario weight distribution can be adjusted to a certain extent by relocating the engine more rearward, moving some components from the engine bay to the trunk, changing front bodywork to lighter parts and changing the front brakes to lightweight forged calipers and two-piece rotors. Adding ballasts can also correct weight distribution, but weight reduction is key to performance so ballasts are a bit counter productive for time attack.

Lastly when choosing a car, it helps to cheat a little. Familiarize yourself with course records and spec lists of top cars. Study the modifications they use and copy what you feel worked. Usually building a successful time attack car is more about improving on what's already been done, than it is about reinventing everything from scratch. If everyone is posting the fastest times with particular vehicles done in a particularly common tuning spec, the odds are it's a good platform and core of tuning parts to work with and improve upon. Currently in Japan and the fastest platforms for time attack are the AWD EVO and Skyline GT-R, RWD Silvia and S2000 FWD Civic and CRX.

Check back next month for the second stage, as we discuss what to do once you've selected your time attack car. ■

