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HOT NEWS
THE 2011 RUNOFFS SCHEDULE UNVEILED!
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WINNING IN PRO RACING'S MX-5 CUP TAKES

RAW TALENT

CHECK YOUR EGO AT THE DOOR

ROCK N ROTARY

Jeff Kiesel brings music to the masses through his job at Carvin Corporation, but on the weekends, it's a high-revving rotary that's music to his ears

BY **JASON ISLEY** PHOTOS **PHILIP ROYLE**

When he got his start in Solo competition, Jeff Kiesel jumped right into the deep end of the pool, competing in E Modified with his three-rotor Mazda RX-7. His next entry into the Solo world is perhaps what he is best known for: the beautifully crafted full carbon fiber bodied B Prepared Mazda RX-7 that he piloted to what would be BP's final – and Kiesel's first – Tire Rack Solo National Championship in 2006.

It was about this same time that Kiesel started looking for a new challenge – and that challenge came in the form of a 1958 Austin Healey Bugeye Sprite. Strangely, this project brought him full circle, back to where it all started in EM. Going from the Mazda RX-7 platform he was so familiar with to the Austin Healey is a bit of a leap, but packed under the hood was the rotary power plant that he was intimately familiar with.

"I bought the car in May of 2006 from Scott McQueen," said Kiesel. "Scott built the car in 1990 and it had a two-rotor, non-turbo motor in it originally, then he switched to a three-rotor, non-turbo motor. He had several suspension [and] chassis changes over the years and was able to pull in three EM National Championships [1997, 2001-'02]. Scott would have had a few more, [but] the car was notorious for breaking [on the high-grip, bumpy concrete]. Also, he did not own rain tires. So providing the car did not break and it was dry both days, he finished at the top."

Buying a car with a proven track record made the transition back to EM an easier one, as Kiesel could focus on tweaking the car to his liking, knowing he had a good foundation to start with.

"I started running the car in September of 2006 after Nationals," said Kiesel. "My first project was to strengthen the weak areas of the car. I talked to Scott a lot that first year and I asked him things like: What areas would you address to make it stronger [and] what things would you change to make the car faster? I also did body work on the car and painted it the lime green color right before 2007 Nationals. The first year I ran it at Nationals, the car was pretty much how I bought it from Scott. I only did a few minor things like spring rate changes and some setup changes, [and] tuned the motor a bit better as well."

Most people would be more than satisfied with jumping into a new car and winning a championship, especially considering the car's

extensive pedigree. But not Kiesel. The 2008 season brought big changes for the little car.

First up was a new power plant. Out came the three-rotor, swapped in favor of a lighter two-rotor fitted with a turbo. This setup dropped 100lbs from the car, and improved low-end torque. The new engine was now bolted to a custom Jerico 4-speed transmission. The transmission was built by Taylor Race Engineering, and features no tail-shaft, making it very compact and light.

Wanting to narrow up the car, Kiesel next went to work on the suspension, relocating all of the pickup points and installing a set of Ankeny Racing Enterprises Penske shocks to help aid mechanical grip.

While all of this work made the car quicker, it was another change that really helped the drivability. "The biggest change that has helped me the most was switching to Goodyear Tires," says Kiesel. "The car not only got faster it was much easier to drive. The car was consistent all the way through every turn and felt really good for the first time ever."

The results of these changes were a pair of Solo National Championships, as both Jeff and his wife, Shawn, took EM and EML.

With two consecutive titles in the bag, Kiesel took it relatively easy in the shop preparing for the 2009 season. A dry sump oil system made it possible for the car to be lowered further and a new carbon-fiber rear body section made working on that end of the car easier.

One reliability issue that had plagued the car was breaking axles. "We had an issue breaking an axle every five to six events," says Kiesel. We got Mike Maier [of Maier Racing] involved and had him switch the car over to a full floater rear end." A full floater is where you have a wheel bearing that handles the lateral load – this relives the axle to handle forward bite and not both.

Much like in previous years, Kiesel's hard work paid off with another championship.

Preparation for the 2010 season made the previous years looks like child's play. "I spent over 260 hours in my shop engineering, designing and laying out the motor relocation," says Kiesel. "Not only did I move the motor, I moved everything to get the balance just right. I made Styrofoam mock ups of every part. The goal was to get 40/60 [front to rear] weight balance and move all the weight between the wheels."

To help achieve the weight balance goal, Kiesel moved the engine back 10 inches and two inches toward the passenger side. The purpose of this was to help maximize the massive Goodyear Formula Atlantic tires Kiesel had chosen for the car. These tires, measuring 20x9.5x13 up front and 23x13x13 in the rear, are wrapped around equally massive Bogart Racing Wheels, 13x10-inch fronts and 13x14-inch rears.

"These tires are designed for [Formula Atlantic] cars that weigh around 1,400lbs and have 40/60 weight distribution with only around 560lbs of weight on the nose," says Kiesel.

Other steps were taken to help further reduce the load seen by the front tires. A narrow Ron Davis radiator was installed, 12-inches farther back than the previous unit, and lighter carbon-fiber front bodywork shaved another 17lbs.

To help reduce the pendulum effect from weight hanging behind the rear axle, the passenger seat was removed and the dry sump system was taken

Jeff Kiesel's Bugeye Sprite packs more attitude than the engineers at Austin-Healey could have ever imagined.

(ABOVE and RIGHT) The passenger compartment is all business, sporting a no frills racing interior. (BELOW) The suspension is hand crafted and tuned specifically for Solo.

from the back of the car and placed where the seat was. This moved 72lbs from the back of the car much closer to the center.

A great deal of time was also spent trying to maximize the rear differential setup. "I had the rear diff in and out over 10 times," says Kiesel. "Testing, adjusting, testing, adjusting, until I got the combination we have now."

When the 2010 Solo National Championships rolled around, Kiesel extended his EM winning streak, winning by 4.7sec over Bob Tunnell.

You might think enough is enough. Kiesel's Austin Healey has been the dominant car in EM since 2007, and the rest of the class seems to be scrapping for second place, but Kiesel is not one to rest on his laurels. "There will always be more development on our car and I will not stop until I feel it can't go any faster," says Kiesel. "I do this sport because I love it and I love the feeling I get when I'm out on course on a good run.

"I develop the car and continue to improve it for myself and no one else. It is a challenge to see how fast I can make it. I enjoy coming up with ideas, designing and building them, testing them to see if they work and how much of a change they make. There have been a few projects that I have tested and they did not improve the car – that's OK, I still learned something."

SPECIFICATIONS

ENGINE

TURBO: Garrett GTX3071

INTERCOOLER: custom 10x8 core 2.5" intercooler piping

ENGINE BUILDER: Jim Mederer of Racing Beat

MODIFICATIONS: Aluminum side housings, street ported; street ported exhaust housings; water jacket modified rotor housings; stage two stationary gears; lightweight, high-compression rotors; RX-8 eccentric shaft; Mazda race dry sump

OIL: Maxima Racing Oils, Extra 4 15w50

COOLANT: Maxima Racing Oils, Cool-Aide

SPARK PLUG: NGK

COILS: LS2 coils

ENGINE MANAGEMENT: Motec M2R engine management system and Motec SDL dash

FUEL PUMP: Aeromotive A1000 pump

FUEL INJECTORS: Injector Dynamics ID2000

FUEL PRESSURE REGULATOR: Paxton

INTAKE MANIFOLD: Custom sheet metal with single 75mm throttle body

FUEL: E85

TURBO MANIFOLD: Custom stainless manifold

MUFFLER: Coast Fab dual stage 3" muffler packed with stainless [what?]

TRANSMISSION/REAR END

TRANSMISSION: Jerico 4-speed dog box by Taylor Race Engineering

CLUTCH: ACT six-puck unsprung

FLYWHEEL: ACT Prolight

PRESSURE PLATE: ACT extreme

REAR END: Mazda RX-7 center with 3-inch Speedway Engineering full floater axle tubes by Meier Racing

DIFFERENTIAL: Mazda RX-7 clutch style

AXLES: Custom axles by Rob Moore at Moore Performance

GEAR LUBE: Maxima Racing Oils 75x90

SUSPENSION

FRONT SHOCKS: Penske triple adjustable 8760 shocks, valved by Guy Ankeny of ARE

FRONT ANTI-ROLL BAR: custom adjustable sway bar

REAR SHOCKS: Penske triple adjustable 8760 shocks, valved by Guy Ankeny of ARE

REAR ANTI-ROLL BAR: None

BRAKES

BRAKES: Wilwood 4 piston Dynalite calipers and 10" solid rotors

MASTER CYLINDER: Tilton dual master cylinder floor mounted pedals

BRAKE FLUID: Maxima Racing Oils Syn DOT 4 Hi Temp brake fluid

WHEELS AND TIRES

WHEEL TYPE: Bogart Racing Wheels 4 spoke GT 13x10-inch front and 13x14-inch rear

TIRE TYPE: Goodyear Formula Eagle 20x9.5x13 front, 23x13x13 rear, R160 compound

BODYWORK

BODY MODIFICATIONS: Carbon fiber front lift off nose, rear lift off back 1/2 built by Carbon Tech

INTERIOR

All Sheet Metal work done by Kirk at CRB Fab

With the 2011 Solo Nationals looming, Kiesel has again been toiling in his shop. The engine package was given a shot in the arm by legendary rotary engine builder Jim Mederer, of Racing Beat, and a new Garrett turbo was fitted for better throttle response and smoother power curve.

"This turbo has made the car easier to drive with better power everywhere," says Kiesel. The new setup produces anywhere from 287 to 380rwhp with the twist of a dial.

(ABOVE) Improvements to the intake manifold, intercooler and turbo (TOP LEFT) have improved drivability and power output this season, all while helping to reduce the weight on the front of the car. (TOP RIGHT) A new rear spoiler design aids high-speed stability and helps keep the back tires planted.

A lot of attention was paid downstream of the turbo. A new custom sheet metal intake manifold dropped 14lbs, and when combined with braided steel vacuum lines, reliability was increased. "We had too many events where a line would come off the wastegate and over boost or lose boost," says Kiesel.

Going to a smaller intercooler saved another 9lbs on the front of the car, and improved throttle response.

With most of the heavy lifting out of the way, Kiesel has now turned his attention to some of the smaller detail work. A new front splitter helped increase down force, and the rear spoiler, with more effective endplates, helped rear traction.

While he wanted to keep the details private, Kiesel let on that he has a few more changes up his sleeve for the 2011 Solo Nationals. So if you're thinking about jumping into the deep end of EM, like Kiesel did, keep in mind that with cars like this carvin' the cones, you're going to have your work cut out for you.

THE COMPETITION

EVEN WITH JEFF KIESEL'S domination of the E Modified class in recent years, the group is still thriving on the National level. A strong turnout of very diverse cars shows up at the Tire Rack Solo National Championships each year. The class sees production-based sedans, kit cars and everything in between. Perhaps it is this diversity that keeps the class exciting.

One very interesting build showed up on the Internet in 2010, in the form of an MGB-GT. Mark Sawatsky is the man behind the build, which started shortly before the 2010 Solo National Championships – where he competed in a C Stock Porsche Boxster.

The 1967 MGB-GT dumped its original engine in favor of a Jaguar 5.3li V12, and Sawatsky has hand fabricated much of the chassis and suspension. If you want to follow the progress, there are hundreds of images of the project (and a couple videos) at **http://ultimatemgbbuild.blogspot.com**.