

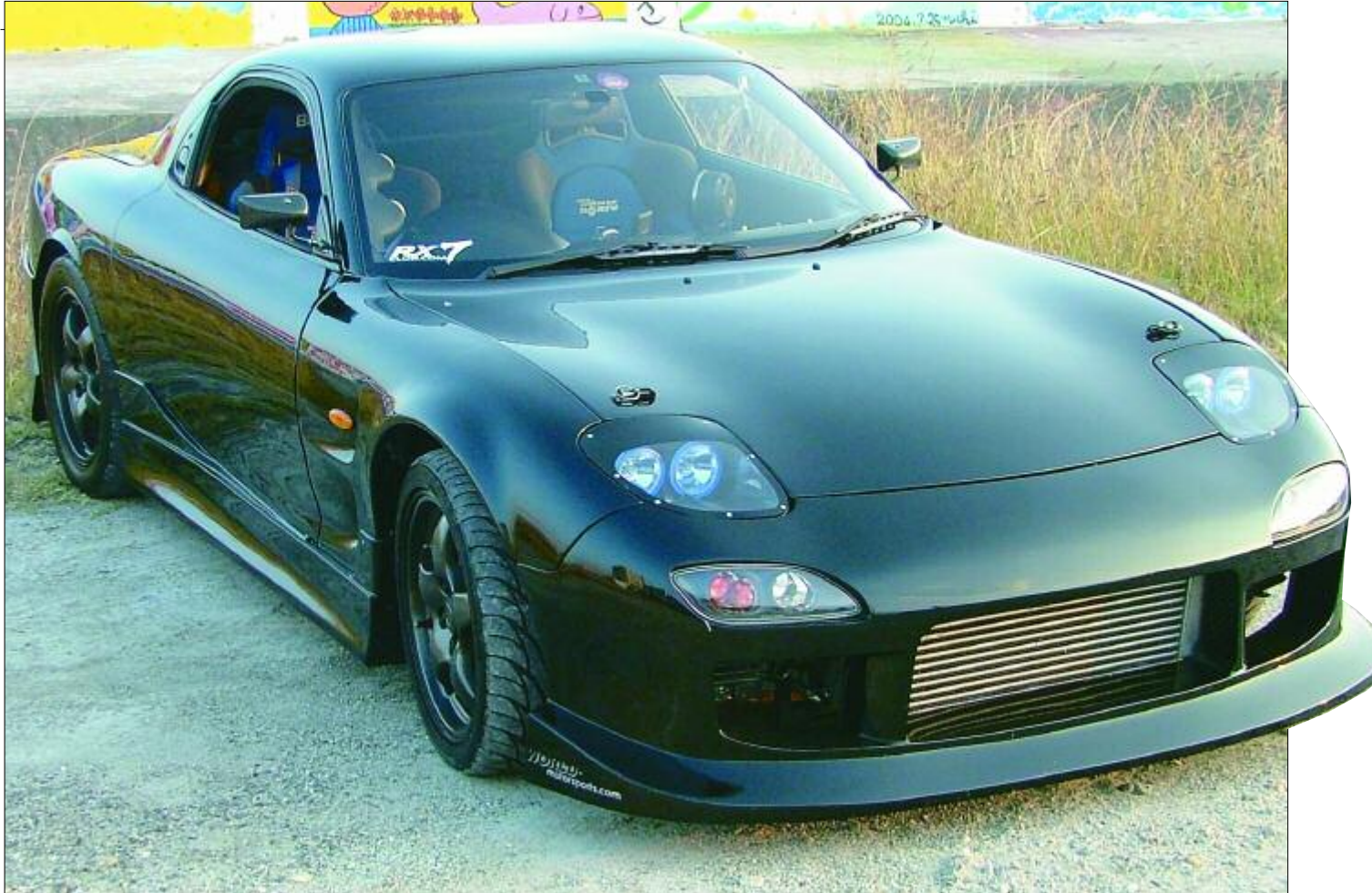


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November 2004

One Evil FD3S



Darrell Thompson at NFI Photography

By DAN BEIGHLEY

Photos By DARRELL THOMPSON

THIS WAS MY FIRST turbocharged car and to complicate matters, it was a rotary. The FD was an impulse buy and I had purchased it without researching the car first. Driving home from the dealership I heard a sound that most 3rd generation RX-7 owners have probably heard at one point in time, the low coolant buzzer came on. My engine temperature was running high and the aftermarket Omori gauges weren't even hooked up. I was beginning to get the feeling that I had purchased a lemon. I pulled into a gas station, let the car cool down and borrowed the hose from the gas station attendant. I drove the car for the rest of the day with no problems. I eventually changed the entire cooling system to trace the problem back to the radiator cap. I felt pretty dumb about the radiator cap but it was a lesson learned. I wasn't completely dissatisfied with my purchase until I ran into a guy named Van Abad. I had noticed Van's red FD parked on the backside of a parking lot one day so I stopped to check it out. I sat there and waited almost thirty minutes for him to come out of the store and approached him as he was walking up to his car. Van was extremely cool and helpful considering that I had stalked him in a parking lot for thirty

minutes. He popped his hood and gave me a basic run down on what I needed to do to make my 13B more efficient and a few simple tricks to add some more ponies to my rotary. We walked over to my FD and I showed him my set up and his exact words were "Damn, you got a long way to go."

Seven months had passed since I first purchased my FD. The motor had one hundred six thousand kilometers on it and it decided to let go. I guess the rotary gremlin felt that seven months was an appropriate time to blow up my motor. I was distraught and disheartened. It was at this time that I decided I was going to over-haul the entire car. This was the beginning of my journey to build one of the cleanest street/strip daily driven RX-7's in Okinawa.

Since the motor was already blown I figured this would be the first step in the project. I summoned the expertise of Christopher Siems at PPR. Van Abad had introduced me to Chris several months after I had purchased my FD. Chris had built a handful of four hundred plus horsepower FD's here in Okinawa. I spoke to Chris and inquired about doing a motor re-build. I told Chris that I wanted a daily driven, reliable and clean finished product. I didn't want him to build something that would break records or put me in the history books, I wanted a motor that I could drive every day without having to fill up the gas tank every one hundred fifty kilometers. I gave him full reign to do whatever he needed to do to get it there.

With a tow strap and an '89 Mitsubishi station wagon I towed my FD down

Featured Ride

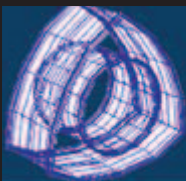
to Chris's shop and the transformation began. I needed several key pieces to bring the project together. I was on a budget and I couldn't afford to purchase all of my parts brand new. Van saved the day and hooked me up with the 62-1 turbine and exhaust manifold. Van also had a front pipe, mid pipe and an HKS Super Dragger muffler. I was able to locate the HKS waste gate used. The motor required a new seal kit and the rotor housings had seen better days. Chris went to the local Mazda dealership and picked up a new set of rotor housings. The next step was porting; Chris took the motor to a local rotary tuner, Beau Jero. Beau gave my motor a large side port with a moderately large exhaust port and sent it back to Chris for assembly. Chris put the motor back together with Atkins 2mm apex seals and fabricated all of the necessary blocking plates to accommodate the single turbine set-up. A Greddy pulley kit was used to eliminate the air pump and the air conditioning was removed to make room for a front mount intercooler and three-core radiator. To ensure that the drive train would support the horsepower Chris fabricated solid billet motor mounts, a lower transmission bracket, re-enforced the power plant frame, made solid upper differential mounts and fabricated a custom lower differential bracket. A Maker's Racing upper motor torque dampener was installed to assist in stabilizing the motor during rapid acceleration. A Kaaz two-way LSD was added to the equation to assist in putting the power to the pavement.

The majority of the fuel system was ordered from Summit Racing and was delivered to Japan within two weeks. Chris installed the KD2Y fuel rail and wired the 1680cc injectors to supply fuel at high boost levels. An Aeromotive fuel pressure regulator was installed to control the fuel pressure. An Earl's in-line fuel filter was added along with Earl's stainless steel -6 fuel line and anodized A&N fittings. The motor was complete but I still didn't have a computer to control my newly built motor. Conveniently, Chris had an extra Apexi Power FC and commander lying around his shop that he loaned me to do my



motor break-in.

I was quickly approaching the completion of my motor break-in and I still needed a computer. Another close friend, Scott Randle was stripping his FD. Scott hooked me up with his Apexi Power FC and commander along with his Apexi electronic boost control kit. Scott also had a mint set of Mazda limited edition RS-R 17" gunmetal rims. This was perfect timing. The break-in was complete and I was ready to tune. For tuning I sourced the skills of Bill Igyarto, aka Iggy. The easiest way to describe Iggy's skills is that of Neo from the Matrix. I picked up Iggy on a Friday night with a full tank of gas for a late night tuning session. After the first run something wasn't right, the boost spiked well over 1 bar so we returned to the shop to troubleshoot the ailment. We traced it back to the electronic boost controller. I did the install with no directions and hooked it up backwards, my bad. We fixed the problem and headed out for round two. The first several runs scared the shit out of me, the new motor was



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fast and I had never experienced this kind of power. On the top end I was running lean on fuel so we turned up the fuel pressure but the dual stock fuel pumps that I had installed were not supporting the fuel pressure. I got up with another rotary friend, Scott Surfass who had a set of Walbro 225LPH fuel pumps sitting in his shop. He hooked me up with the pumps and we called it a night. The following day I installed the twin Walbro pumps and wired them with a direct 12-volt power supply on a relay straight to my battery. I picked up Iggy again that night and he finished writing the map on my computer. Life was good, I was tuned and my FD was running like a raped ape.

Chris Siems came through with a full RSR coil over suspension. I wanted to eliminate the Anti Lock Braking system so I went to Bill Igyarto for assistance with the removal. Bill installed the Summit Brake proportioning valve and Summit Line lock solenoid. For rubber, I decided to run 275/17/40R Nitto 555

Drag Comp tires on the rear. The line lock accompanied with the Nitto drag radials make a good combination for hot and sticky tires.

Now that the car was tuned it, was time for cosmetic treatment. I wanted to keep the overall appearance of the FD simple and clean. I wanted the car to look aggressive and I didn't want it to look like something out of the Fast and Furious. I decided to stay with the factory black color and I chose the Wise Sport body kit because it looked clean. I learned a valuable lesson about paint and bodywork with this project. Do your homework and make sure that you go to a shop that knows how to paint. To protect the innocent I am not going to drop any names but I took my car and body kit to a local American painter who claimed that he could "hook my car up." Well needless to say he hooked my FD up and six weeks later I had a less than Maaco quality mess that was peeling off of the car due to the fact that he didn't mix any hardener with the



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paint. Betsy Ross could have done a better job. I was pissed but I got my money back and took the car to Kazu Hisa at Gushikawa Auto & Paint. The entire car needed to be stripped, re-sealed and re-sprayed. I had to replace the front and rear window seals because Betsy Ross had sprayed them into the clear coat finish during the first paint job. It took Kazu at GAP five weeks to repair the damage that had been done to my FD. Kazu also shaved the entire body, rolled the rear fenders and installed the body kit. The custom headlight kit came together with Rotary Extreme light buckets combined with two sets of H3 SUV driving lamps that Beau Jero had lying around his shop. Chris Siems did the initial installation and Kazu Hisa put the finishing touches on the light kit by fabricating custom light covers and making everything fit.

I went to John Pullen at Speed Box welding in Ishikawa for assistance with putting the finishing touches on my engine compartment. John fabricated a custom lower mounting bracket for the new three-core radiator, which lowered it two inches. By lowering the radiator two inches John was able to route the 80 PI intercooler piping straight over the top of the new three-core radiator. John executed the whole process with extreme attention to detail, polishing all of the new piping and radiator. John fabricated a trick mounting bracket for the Greddy oil catch can, which gave it a clean and custom appearance.

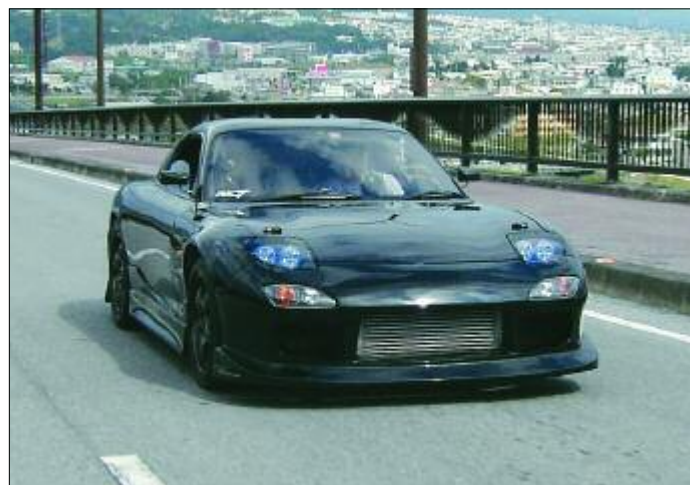
I took the FD to the Okinawa Apexi Dealership and did a power check and a top speed run on their dyno. At 1 kilo of boost the FD laid down 448 PS @ 6500 RPM to the rear wheels with a top speed of 319 KPH at 8500RPM. This was more than what I had expected going into the project. The motor has potential for more power with the fuel and turbine in place to support higher boost levels. It was tempting during my tuning session to turn up the boost but I wanted to keep things reasonable. From stoplight to stoplight, at 1 kilo of boost, the FD has humbled a handful of built JDM muscle cars to include the R34 Nissan Skyline GTR from stoplight to stoplight. The finished product has a perfect balance of performance and reliability; I don't have to worry about breaking something every time I run the car. The last two sanctioned drag racing events in Okinawa have been washed out by typhoons but I am planning on running the car in the next event this December. Unfortunately, Okinawa only has an eighth-mile drag track so I'll be lucky if I can get the car out of second gear.

Most FD owners mention that they want to go 20B for their future tuning plans, not this kid. I am pleased with my current 13BREW set-up. I have plans to relocate the ignition coils from under the upper intake manifold to the old

ABS mounting location; I would also like to add an HKS Twin Power Ignition. I am also planning on swapping the stock brake rotors for some cross-drilled or slotted rotors. I have a Cosco six-point roll cage on order with Auto Shop Turbo that will stiffen up the chassis and give an added note of safety to the car. After the roll cage is installed I plan on installing a custom stereo to finish off the interior. My stay here in Okinawa Japan is soon coming to an end. Next June I will be relocating the FD back to Eastern PA, I'm still uncertain about what exactly I'll do with it once I get it there. More than likely you will see it at Import Drag events and car shows throughout the northeastern United States.

It's been a year and eight months since I made the decision to overhaul the FD and it's been a roller coaster ride filled with surprises. From the time that I purchased the car over two and a half years ago I never thought it would be where it's at today. It wouldn't be here if it wasn't for everyone that supported my cause. Out of everyone that helped me along the way, Christopher Siems was the main contributor. There were several times throughout the project that I thought Chris was going to kick my ass because I was being

over critical about something or I had wanted to polish or clean something on the motor that made absolutely no sense. Chris put up with my anal retentiveness and produced an immaculate finished product. I've made allot of good friends since this project began. We all have two things in common, we love cars and we love rotaries. ZOOM! ZOOM!



The Mods

ENGINE / DRIVETRAIN:

- Custom built stage two Side Ported 13BREW w/ 2mm Atkins Apex Seals
- Turbonetics Turbine 62-1 P-Trim A/R 1.0 Hot side
- HKS 50mm Stainless Steel Exhaust Manifold
- HKS Racing 52mm Waste Gate
- Custom 80mm exhaust with Borla resonator
- HKS Super Dragger muffler w/ extended 100mm tip
- Walbro Fuel Pumps 255LPH (x2)
- EARL's -6AN Stainless Steel braided line w/ anodized A&N fittings
- EARL's In-Line Fuel Filter
- Aeromotive Fuel Pressure regulator
- KD2Y Billet Aluminum Fuel Rail
- BOSCH 1680 cc Secondary Fuel Injectors
- Racing Design Polished three-core radiator
- Custom coolant air separator tank
- Modified throttle body
- Turbonetics T-Band clamps
- Greddy Type R Blow Off Valve
- Greddy two-core FMIC with custom piping
- Greddy Polished Intake Elbow
- Greddy Under Drive Air pump elimination Pulley Kit
- Greddy Oil Catch Can w/ Custom aluminum mounting bracket
- OS Giken 990kg B type twin plate clutch w/flywheel and push/pull kit
- Kaaz two way limited slip differential
- Custom billet solid engine mounts
- Custom re-reinforced power plant frame
- Custom transmission brace

- Custom solid upper differential mounts
- Custom lower differential brace
- Maker's upper engine torque dampener
- Custom Earth Grounding Kit
- Polished Motor accessories

ECU & ENGINE MONITORING:

- Apexi Power FC w/Commander
- Apexi Electronic Boost Control Kit
- Apexi Turbo Timer
- Defi link II Computer w/ Warning Lamp Indicator
- 115mm Defi Tachometer
- 60mm Defi BF Fuel Pressure Gauge, Boost Gauge, Exhaust Temperature Gauge, Water Temperature Gauge, Oil Temperature Gauge, Oil Pressure Gauge

SUSPENSION / RIMS & TIRES / BRAKING:

- Mazdaspeed Front Strut Tower Bar
- RSR Coil Over Suspension
- 1997 Mazda FD3S RS-R limited edition Rims (500 sets manufactured),
- 17"x 9J (rear) 17"x 8.5J (front)
- 25mm Rear Wheel Spacers
- 20mm Front Wheel Spacers
- 275/17/40R Nitto 555 Drag Comp (rear)
- 235/17/40R Federal Cheapies (front)
- Summit Brake Proportioning Valve
- Summit Line Lock Kit
- Cosco Brake Master Cylinder Brace

INTERIOR MODIFICATIONS:

- Blitz Konig Bucket Seats
- Custom seat rails

- Greddy 60mm X 2 A-Pillar Gauge Cluster
- RE Ameyra 60mm X 3 Air Bag Gauge Cluster
- Knight Sports 300 KPH Speedometer
- Momo Steering Wheel
- Razo 380 kg Ball Shift Knob
- Willians 4 Point Safety Harness
- Custom Battery Relocation
- Kenwood in-dash double din CD/MD player
- Pioneer Carrozzeria 3-way mid-range speakers in lieu of factory speakers
- Polished RX-7 door step plates

EXTERIOR MODIFICATIONS:

- Kouki (99 spec) tail lamps and turn signals
- Custom Flush Mount Headlight kit
- Swat Racing Carbon Fiber GT Mirrors
- Shaved Body w/ Mazda Brilliant Black Paint
- Rolled rear fenders
- Wise Sport Type A Fiberglass Body Kit
- Wise Sport 20mm Fiberglass Front Fenders
- Cosco Hood Pins

SPECIAL THANKS TO:

Christopher Siems, Van Abad, Scott Surfass, Bill Igyarto, Bret Rogers, Scott Randle, Beau Jero, Kazu Hisa, Devon Davis, Yoshio Tokashiki, Agarie Yoshio, TJ Capps, John Pullen, Tamotsu Nema, Chris Payne, Sean Engle, Ben Shannon, Mark Fite, Emry Ruffin, Misa Murimoto, The Beigley Clan for their love and support.

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