

# CY Monster!



By Benjamin Nichols

**T**HE MECCA. THE SHRINE. THE HOLY GRAIL. One of an estimated 300 remaining in the US, this 1993 Competition Yellow Mica R1 model has been modified to the extreme for both performance and reliability. Piloted by Lt. Commander Carlos Iglesias, this FD is built and raced when its owner isn't busy with his day job; flying the Navy's SH-60B Seahawk helicopter.

The car was designed from the start as a driving school toy that could be driven to and from the track. The car's vision was designed by its previous owner, Mark Valskis, the Chief Engineer for Brembo North America. Purchasing the car in December 2002, Carlos' self-taught insight into building and tuning FD's was the perfect complement to bring that vision to life. Upon purchasing the vehicle from Mark, the majority of the performance parts were already present. The task for Carlos was to create all of the plumbing and wiring, as well as tuning. He would materialize the vision.

The key design innovations for the car's powerplant was to optimize the thermal efficiencies of the entire cooling system. Unsatisfied with available aftermarket products, a custom intercooler and radiator were fabricated. To best utilize airflow to these components, an aluminum sheetmetal duct was constructed for the front fascia. Oil temperature is reduced with dual CWR Mocal oil coolers and fed via custom braided lines.

The alternator was relocated, and the bulky stock water pump housing was eliminated in favor of a much more elegant and effective electric water pump. The intention was to provide more room between the engine and radiator for a more effective release of heat. Additionally, the setup was designed to facilitate an IC-to-hood exhaust duct as the next major addition. For further ventilation, and providing a brilliant color contrast from black to yellow is a VIS KS hood with ThermoTec thermal blanket liner.

Having handbuilt all of his engines, Carlos bored out the intake and exhaust ports, and rebuilt the rotors with Iannetti 3mm one-piece ceramic apex seals and Mazda Competition side seals. Additionally, it was outfitted with Teflon-encapsulated coolant seals, another measure to address some of the engine's common failures. Providing a slightly more efficient flow of air into the engine, JDM lower and upper intake manifolds were used; the



throttle body was ported to match.

With huge turbochargers being the common trend, the vehicle was outfitted with a modest turbine setup. For an otherwise indulgent monster the car's Apexi RX6 turbocharger kit is generally capable of just over 400rwhp, more than any reasonable person would ever consider necessary for a street-driven car; however somewhat humble for a typical racecar. The most attractive property of this turbine system is the quick spool-up associated with its ball-bearing system. "I normally run about 16lbs of boost with an air/fuel ratio of 11.5:1 on 93 octane pump gas. It has been tuned up to 20.5lbs with only an 81 percent injector duty cycle, but the RX6 loses efficiency at much more than 20lbs," Iglesias said. The completed system is vented by both a TIAL Blow off valve and an HKS Racing SS wastegate. When the turbocharger's finished with the exhaust, the gases exit via the four-inch



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HKS titanium exhaust system. The four-inch system had to be custom out-fitted, as most aftermarket exhaust components for the 3rd gen RX7s are generally three inches in diameter.

As would be expected from Brembo's chief engineer, the brakes were also designed in world-class fashion. Though racing calipers were an option, they were excluded in favor of a lower maintenance, more streetable setup. The setup includes massive Brembo F50 and F40 brake calipers fitting snugly over Brembo slotted rotors, providing the best in stopping power for both street and race applications.

In addition to the braking system, all four corners have upgraded suspension. Ride quality has been beefed up with Ground Control coilovers surrounding Bilstein struts. For cornering, especially in AutoX and road racing, front and rear sway bars by Racing Beat replace the factory bars. A Mazdaspeed differential mount secures the rear end, and reduces the chances of cracking the powerplant frame or damaging the differential during hard launches and shifts. The car rolls on black 18x10in Technomagnesio rims, and Kumho DOT-R rubber.

The interior has been "relieved" of everything not needed to go fast or stop quickly. The AC and heating components have been removed, as have the radio and other accessories. Many of the stock internals have been upgraded as well. The MOMO catalogue is on display in the form of seats, steering wheel, shift knob, and pedals. The CYM is equipped with a chromoly rollbar by M2, and five-point harnesses by Schroth. The B&M short-shifter promotes ease of shifting, while surrounded by a cornucopia of HKS gauges, which replace the somewhat unreliable factory setup.

A sought-after TechEdge wideband O2 sensor is mounted for ease of tuning the Haltech E6k standalone fuel computer. An additional bung is welded into the downpipe for the wideband sensor.

With only 1,500 miles since construction was completed, it has already had a mechanical shake-down run during a local SCCA Autocross. In response to initial test runs, Carlos commented, "all I could do was hold on for dear life." Making matters worse, the old BFG G-Force tires that the car wore for the last three years of its development were heat-cycled into the consistency of concrete. To paraphrase Pirelli's old ad campaign, "all power, no control." But with the car's new shoes and Iglesias' insistence on constant design innovation, we're willing to bet that this rotary beast will attack Florida Autocross and road courses with a vengeance. **RX**



### 1993 RX-7 R1

#### ENGINE:

**Engine Code:** 13B-REW

**Type:** Two rotor Wankel turbocharged and intercooled

**Internal modifications:** Stage II Street Port, Iannetti 3mm one-piece ceramic apex seals, Mazda competition side seals, Teflon encapsulated coolant seals

**External Modifications:** Apexi RX6 turbocharger (stainless divided exhaustmanifold), HKS 4inch titanium exhaust system, Spearco FMIC

**Engine Management Mods:** 850cc primary injectors, 1630cc secondary injectors, Haltech E6K engine management, Taylor ignition wires

#### DRIVETRAIN:

**Layout:** Front-mid engine, rear drive

**Drivetrain Modifications:** ACT X-treme pressure plate, stock clutch disk, SRX7 8.5lb flywheel, Mazdaspeed differential mounts, engine mounts

#### SUSPENSION:

**Front:** Bilstein Struts, Ground Control coilovers

**Rear:** Bilstein Struts, Ground Control coilovers

#### BRAKES:

**Front:** Brembo "F50" brake kit, Brembo 355mm x 32mm slotted rotors, CWR brake ducts, Kevlar/carbon fiber

**Rear:** Brembo "F40" brake kit, Brembo 332mm x 38mm slotted rotors

#### EXTERNAL:

**Body:** '99 RX-7 front fascia lower spoiler

**Wheels:** Black Technomagnesio wheels

**front:** 18x10 front

**rear:** 18x10 rear

**Tires:** Kumho VictoRacer 265/35/18 front; Kumho VictoRacer 285/30/18 rear