



The SRRT/Phoenix Subaru Impreza WRX STI is the first four-banger Subie to take on the full-tilt Grand-Am Grand Sport class in Continental Tire competition.

sahar hassani photo

WHO'S THE BOSS?

A Four-Cylinder WRX STI Battles V8 Goliaths in the Continental Challenge's Fastest Class

story by sahar hassani • photos as credited

THE WRX STI CAN TAKE SOLACE IN BEING THE ONLY FOUR-CYLINDER CAR IN THE ULTRA-COMPETITIVE GRAND SPORT CLASS.

The mystique of the Subaru Impreza WRX STI is undeniable. Drivers have been captivated by its turbocharged power, all-wheel grip and ability to leap through the air with lightning speed. While the Impreza WRX STI is known for its show-stopping rally performance, its impressive dynamic handling and power also make it an ideal contender in the road racing circuit—especially during inclement weather.

“The WRX and the WRX STI are targeted at the performance enthusiast,” explains Todd Lawrence, promotions and sponsorship manager for Subaru, “someone who knows the technology and performance of our products beyond what they read or see in an ad. So road racing, the X Games and Rally America all allow us to reach these passionate customers in a relevant way that is not possible through mass media.”

Late this past January, Subaru entered their current Impreza WRX STI in the Grand-Am Continental Tire Sports Car Challenge series. The event, which takes place at Daytona International Speedway, is the Friday precursor to the weekend's 24-hour Rolex series race. While the STI struggled with some gremlins during its debut race, the car showed hints of brilliance en route to a 15th-place finish out of 40 cars in the ultra-competitive Grand Sport class.

The WRX STI can take solace in being the only four-cylinder car in the class. The group is currently dominated by the BMW M3, Ford Mustang GT and Chevy Camaro—cars, incidentally, that compete against the STI for market share.



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The Facts of Life

The Continental (formerly Koni) Challenge, an endurance series that lets two drivers share one car, is one of the most competitive road racing venues in the country. It also serves as a successful marketing platform for car manufacturers.

The Subaru Road Racing Team ran the Subaru Legacy 2.5GT spec.B in the series' Street Tuner class last year. The Legacy proved to be a tough contender in the 40-car fields, running valiantly against the Chevy Cobalt SS, Acura TSX, Honda Civic Si, BMW 330 and other sporty compacts.

The team finished third in manufacturers points and second in drivers standings thanks to the efforts of co-pilots Andrew Aquilante and Kristian Skavnes. They also tied for first to earn the Team Performance Index award—Andrew won the Driver Performance Index for the class, beating out more than a hundred other drivers.

When Subaru stopped production of the Legacy 2.5GT spec.B, it was time to retire the race car. “Subaru of America desired to have a current model year campaign in 2010,” says Joe Aquilante, team owner and manager. When the Legacy went into retirement, Subaru decided to run its new Impreza WRX STI.

Todd Lawrence explains the manufacturer’s reasoning: “The WRX STI is the halo product in our performance

portfolio, and it compliments our efforts in rally. Both rally and road racing are important parts of our racing strategy and allow us to test our engineering under extreme conditions and against a wide range of competitors.”

The STI would race with the big dogs—Mustangs, Camaros, BMWs, Porsches and Audis—in the Grand Sport class. While the team would face a tougher field, they would also have the opportunity to compete for overall honors. “In multi-class racing, there is a prestige in running in the faster class,” Andrew explains. The top-tier Grand Sport class tends to receive more media coverage—including that all-important TV airtime—than the slower Street Tuner division.

The marketing part of the plan wasn’t limited to on-track finishes. Subaru also wanted some young blood behind the wheel. Andrew and co-driver Bret Spaude are both 22 years old.

“The Subaru crowd is generally a younger group,” Andrew explains. “They are typically in their early 20s and 30s and enjoy watching the STIs perform.”

Diff’rent Strokes

Each car model found in the Continental Tire Sports Car Challenge series is built to similar yet slightly differ-

The Subaru WRX STI faces tough competition in Grand Sport from the likes of BMW M3 Coupes, Ford Mustang Boss 302Rs and Porsche 997s. Phoenix Racing did an amazing job preparing the car, which sports the mandatory ATL fuel cell and an ultra-stout cage structure.



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ent specifications. Grand-Am, the sanctioning body, allows varying degrees of modifications in an effort to equalize the field. While all cars follow the same basic level of preparation, the details can vary from model to model. Information on each car's allowed modifications can be found in the Grand-Am rule book.

"The Subaru WRX STI is unique to other Grand Sport cars in the series," Joe explains. After all, it's the only car sporting a turbocharged, four-cylinder engine and all-wheel drive. "It's not a V8," he grins. Even so, at about 350 horsepower, the Subaru is some 50 ponies shy of the V8 cars. Their car must weigh at least 3100 pounds dry, making it a bit lighter than the V8 machines found in the class.

"The major expenses in building the car are the roll cage fabrication, fuel cell and the other purchased components," Joe reports. From start to finish, it takes about 90 days to build a WRX STI race car. The team currently has two STIs in the stable, but they're only campaigning one at the moment.

The best and easiest way to build a STI for the Continental Challenge series is to start with a complete street car, the team explains, even though a lot of unnecessary parts will be tossed. The stock seats, carpeting, stereo system, panels and trim won't be needed.

"We stripped down the street car, which was the hardest part of building the race car," Andrew explains. "It took us about a week to strip everything off." Major safety modifications followed, including the addition of a full roll cage, Sparco steering wheel, fire system, racing seat and window nets.

The Grand-Am rules dictate which aftermarket speed parts can be used, although the STI's engine must remain stock. That adds some difficulty to the

Subaru Road Racing Team/ Phoenix Performance Impreza WRX STI

layout:	front engine, all-wheel drive
engine:	stock 2.5-liter horizontally opposed 4 cylinder, stock PCM w/EcuTek tuning software, Invidia exhaust system, Mobil 1 oil, Ron Davis Racing radiator w/integrated oil cooler
transmission:	stock transmission w/Mobil 1 fluid
suspension:	Hypercoils coil-overs front and rear w/Koni dampers, -3 degrees negative camber front and rear (maximum allowed by rules), Perrin Performance anti-roll bars, Phoenix Performance custom bushings
interior:	Phoenix Performance custom roll cage, Cobra Suzuka GT seat, Sparco wheel, Schroth harnesses, AIM Sports gauges
wheels:	Complete Custom Wheel 18x10-in. SP16a forged alloy
tires:	245/40R18 Continental Extreme Contact DR
brakes:	Brembo calipers, Phoenix Performance ducts, AP Racing fluid, Hawk DTC70 pads
weight:	3100 lbs. dry
numbers:	350 hp, 1.5g maximum recorded cornering load, 160 mph top speed (at Daytona)



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The Brembo brakes aren't a radical departure from the OEM setup, though they use Hawk pads and ample ducting to keep them within their operating temperatures. AIM Sports digital gauges cover the stock dials. Because the STI's turbocharged four-cylinder boxer engine is about 50 horsepower shy of its V8 competitors, the car is allowed to run a bit lighter than the rest of the field.



equation. “We have more heat to deal with and stress on stock components,” Joe explains. “We budget two races per engine. We time change them to keep them fresh and anticipate using a total of five engines throughout the season.”

The team reports that the cars handle well, but there’s still work to be done. “We now need to work on power within the rules framework, which does not allow us to modify the drivetrain to any appreciable degree,” Joe explains.

To ensure that the STI would be competitive against the other Grand Sport entries, Grand-Am gave the car some concessions. The Subaru racer is allowed to carry more fuel than its stock counterpart—four extra gallons. The team can now go a full hour on a tank, a typical range for most cars in the class. Grand-Am also specifically allows the STI to upgrade to a beefy Brembo brake caliper.

Like all other cars in its class, the WRX gets to run an open exhaust, stiffer suspension hardware and the mandatory Koni shock absorbers. Deciding exactly which aftermarket components to run was one of the team’s biggest challenges. However, they had an ace up their sleeve: team technical director and chief engineer John Heinrich.

John recently retired from General Motors, where he served as director of their performance division. He also has 11 SCCA national road racing titles to his credit and has lapped Nürburgring in less than 8 minutes. “John has provided input on suspension and drivetrain engineering—geometry and suspension tuning, mostly—plus test driving during the first test days,” Joe explains.

Growing Pains

Their 2¹/₂-hour debut race at Daytona was admittedly a learning experience. The hardest part was getting the new car dialed in.

“The biggest trick we have learned is getting the PCM tuning to live within the boost limits set by Grand-Am and to minimize boost spikes and turbo pressure creep,” Joe explains. “We are still working on that.”

The team also needs more speed. “The car is three seconds off the pace and needs to close the horsepower gap,” Joe continues. “We are 8 mph slower than the V8 cars at the terminal velocity points on the long straights at Daytona.”

While the team continues to fine-tune the WRX STI, John is mentoring his young drivers and helping them develop their analytical skills. “John is one of the best development engineers for performance cars,” Joe explains. “He is eminently qualified for the task. He is a great mentor for Bret and Andrew.”

The 2010 Grand-Am season started at the fastest track on the calendar, Daytona. As the season unfolds, the Subarus should excel on tight tracks that feature short straights such as New Jersey Motorsports Park, Barber Motorsports Park, Watkins Glen and Lime Rock. And if it rains, look out.

“Subaru makes a great product that is fun to race,” Andrew says, smiling. “The all-wheel drive allows you to do things that other cars can’t.”



Grand-Am Continental Tire Sports Car Challenge: Coming to a Track Near You

The Continental Tire Sports Car Challenge is an endurance series sanctioned by Grand-Am, the same people behind the Rolex 24 At Daytona. Aside from one 2-hour race, all of this season’s Continental Tire Sports Car Challenge contests will last 2¹/₂ hours.

Jan. 8-10: January Test Days at Daytona, Daytona International Speedway

Jan. 28-29: Fresh From Florida 200, Daytona International Speedway

March 5-6: Homestead 200, Homestead Miami Speedway

April 8-10: Barber Motorsports Park

April 23-24: Virginia International Raceway

May 28-29: Lime Rock Park

June 4-5: Continental Tire 150, Watkins Glen International Long Course

June 18-19: Mid-Ohio Sports Car Course

July 16-17: New Jersey Motorsports Park

Aug. 13: Grand Prix de Trois-Rivières, Circuit Trois-Rivières

Sept. 10-11: Miller Motorsports Park

Meet Subaru's Road Racing Team

While Subaru of America sponsors the Subaru Road Racing Team, the effort is managed by Joe Aquilante of Phoenix Performance, Inc. Thanks to an impressive driver roster—which has included John Heinricy, Don Knowles and Andrew Aquilante—the team has seen their share of success. They have deep roots in SCCA and IMSA competition, with 17 national titles to their credit.

The team's shop is 40 miles west of Philadelphia and only a short drive from the Subaru of America corporate headquarters. The complete facility measures 32,000 square feet, with 4000 feet devoted exclusively to Subaru.

"We have three full-time employees, including my son Andrew, Jason Lang and Matt Smith," Joe explains. "We do custom work for over 200 racing customers and do everything in-house, including paint and graphics." They also provide on-track support for both club and pro events.

In 2004, the team established a partnership with Subaru of America on a trial basis by running

an Impreza WRX STI in SCCA's Touring 1 road racing class. The car wasn't powerful enough for the class, so it was reassigned to Touring 2 the following year. The team responded by scoring back-to-back titles in 2005 and 2006.

The team also introduced Subaru to professional endurance racing in 2006, as they campaigned a Legacy 2.5GT wagon in a few Koni Challenge events. This was the series that became today's Continental Tire Sports Car Challenge.

Feet wet, they switched to a Legacy spec.B for 2007 and ran five races, scoring a pair of wins. The Subaru Road Racing Team ran the full Koni Challenge series the next year and finished fifth in points. They continued their efforts into 2009 and had their best Grand-Am season to date: third in manufacturer points, second in drivers points, and a Driver Performance Index title.

New challenges are in store for the team in 2010, as they have moved up to the Grand Sport class with their new Impreza WRX STI program.



CLOCKWISE FROM TOP LEFT: Andrew Aquilante and Bret Spaude are co-driving the Subaru, and they managed a 15th-place finish in the car's debut at Daytona. The Subaru Road Racing Team is managed by Joe Aquilante of Phoenix Performance, Inc. Jason Lang, one of the full-time employees at Phoenix, helps maintain the Subaru Impreza between track sessions.

