

TRIAL BY FIRE: ATI GOES TO INCREDIBLE LENGTHS TO TORTURE TEST ALL OF ITS HIGH PERFORMANCE PRODUCTS

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ATI supplies many of the products Chevrolet specs out for the Copo Camaro, so it only makes sense that the company chose one for its racing program.

Practically every company in the motorsports market talks about how they test their products. And it's true that most do dyno testing and even some real-world testing before they go to market with a new product.

But very rarely have we ever seen a company make the investment in continual product testing that ATI has in terms of both money and time by the head of the organization, JC Beattie. ATI actually owns and Beattie maintains and campaigns multiple racecars that are used as rolling testbeds for developing new products. That, of course, is in addition to the companies dynos and test cells as well as the engineering staff.

"It started with my dad back (Jim Beattie) in the '70s when my dad had just gotten started working on torque converters for everybody," JC explains. "It became necessary to test so that he could determine what was going on and what worked best.

"As my father worked to develop the product he would get with teams and rent tracks, and people didn't rent race tracks at that time. He would bring lunch, bring a bunch of converters, and even bring people to help. And the racers benefitted too. They knew what their cars would do, and they got real life, real world information they could give back to my dad. 'Hey, this converter works well,' or 'This converter isn't any good at all.' So that helped develop the product, and it also helped racers get a little testing time, which they appreciated, while also developing ATI's name.

"Today it's still hard to really do any good testing during a race weekend," he continues. "Every pass is valuable. When you are racing, you don't want to take a chance testing a new product. These days you don't even want to change a tune between rounds. So we still rent tracks and go testing just like my dad did decades ago."

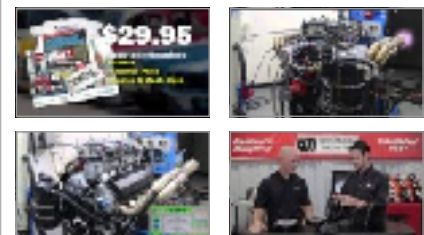
Because ATI was founded on rigorous testing, it remains in the company's DNA. In fact, Jim—before his

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The Dodge Challenger JC Beattie first raced in the Stock Eliminator division.

passing this year—and JC even expanded upon it by purchasing and racing their own race cars.

"I grew up racing go karts, and we developed some products for that market based on what we learned racing," JC says. "Then I got into circle track stuff, and we used that as an opportunity to

develop products for that. Then I settled down for a little bit and didn't do much until they announced the drag pack program. The Ford stuff was out, and we didn't get a Ford. But we did get a Dodge. And we used that car to put together Stock Eliminator class racing program.

"That was really my first taste of drag racing. We showed up with the ATI car in the Stock Eliminator for a couple of divisional races, and then we went to a nationals at Englishtown. That was back in—I think—2010, and Englishtown was my fourth race ever."

Beattie says he learned a lot racing his Dodge Challenger in the Stock Eliminator class. One example is a new damper developed specifically for that car. In that horsepower limited class many racers were looking for the lightest damper possible in attempt to reduce rotating mass, but Beattie learned that the car actually responded better with a bit heavier damper. Of course, this went against the conventional thinking at the time, so many balked at the idea of bolting on a heavier damper to the snout of the crankshaft. But when Beattie could show them that was what he was running on his car and the timeslips that went with it, it went a long way toward changing people's minds.

Hey says they also learned a lot about how to improve their torque converters for some unique situations. "The first converter we developed for the Challenger flashed at 5600 rpm. And we did that because that's where peak torque was. That was the general consensus back in the day; flash the converter at peak torque and that will do the best.

"So then we tried a little bit looser converter that went to 6,000 and saw success. Then we upped it to 6,200 and 6,400, and then somebody else running one said, 'Hey, I need one at 6,500.' And it worked.

"Today we often shoot for a torque converter in the car that flashes at 6,700, which is almost a full thousand RPM above peak torque. But we're going faster. It's not something you can draw out on paper and say, 'Yeah that should work.' You've got to go out there and test it and prove it yourself. You've got to know before you sell the first converter because racers can't afford a failure. Some may think that a few dyno runs is good enough, but I believe you really have to put the product on a track in real-world situations to verify that it is going to work like it should.

"And that is the same way we developed our Super F transmission fluid," he continues. "I knew I wanted a synthetic fluid. We got hooked up with Lake Speed Junior at Driven Racing Oil and he helped us with the formulation. He sent us 5 gallons of that fluid to test, and I ran that same 5 gallons—really only about 3 gallons—the whole year. I just kept dumping it out, straining it with a paint strainer, and then dumping it back in and topping it off with a little fresh fluid if the transmission needed it.

"I ran that stuff all year. We put 100 passes on it in the stocker, and that's what we did before we were willing to put the product out with our name on it. I was confident it wasn't going to cause anybody any trouble. Because at the end of the day I am easy to reach, and anybody



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can call and scream and yell at me if one of our products lets them down. I don't want that."

ATI's JC Beattie believes the best way to prove a new design is to put it into a car and give it real-world abuse. And so he races multiple cars so that he can verify the products his company sells all work as advertised.

In 2012 ATI added to its racing fleet with one of the very first Copo Camaros built. Beattie says it only made sense to start racing the Camaro, after all, ATI was already chosen as the preferred builder for the dampers, flex plates, crank adaptors, torque converters, transmissions and fluid. But Beattie didn't retire the Dodge Challenger. Instead, he still races it in Stock Eliminator and runs the Camaro in Super Stock. Racing two different cars may make for a punishing weekend, but Beattie sees it as an opportunity to put that many more parts to the test.

"I had wanted to have a second car to run in Super Stock to help refine our (Turbo) 400 stuff and our Powerglide stuff," he explains. "I wanted something with more horsepower than the Stocker, but I didn't want to give up the Dodge, either. I bet I've got more passes on our Copo Camaro than anyone else out there. We've run it in three different series with two different styles of engines and three different types of tires—just gaining info.

"We flog the heck out of that thing," he adds. "We used it to test the first aluminum forward drum with a steel insert. That ran in the Copo for almost a full season before we made it available to others."

Beattie also talks about how he and his crew at ATI mocked up a short staging area to make test runs with the Camaro while the company was developing its very popular Wicked Quick Billet Aluminum Valve Body. "You can only see so much on the dyno," he says, "either the engine dyno with a transmission hooked to the engine or the valve body dyno. So we tried to set up a more real-world testing environment when developing our new valve body.

"We set up a lane at our shop in the parking lot and over a two-day span of testing we tried out 14 different variations on the Copo to see how they all stacked up. We put down lines in the parking lot and set up a video camera to record everything. Then we made short passes to see which one would rock the least and lock down the hardest at idle, 1,500 rpm and 2,000 rpm. We would bring it in and put it up on the lift, drain the fluid and put a blower on it. After it sat for 15 minutes we'd pull the valve body and put the next one in. Then we'd put that same fluid back in and take it out for another run. And we were able to record it all with the Racepak datalogger and then lay it up with the video to compare that with what felt best from the driver's seat.

"Then we took that to the track to verify it. The guys that will really need that are the ones with heavy cars and with really high horsepower stuff. It's got to be quick, a 4/10 tree is no joke, and this new valve body is going to help a lot of racers out."

Normally Beattie will run five events a year and rent out a track for himself and other drivers an additional five times. And for everything he'll take both cars. That's a ton of laps, but he's not the only one doing significant testing work on ATI's lineup of racing products. Pro Mod racer Chris Rini—who has done a lot of winning all over the United States—is also trusted to torture test ATI's new and upgraded products.



Chris Rini's Pro Mod Camaro.

"ATI has helped accelerate us in the automatic heads up world tremendously," he says. "Seven years ago if you told somebody you were going to run Pro Modified and have an OEM-type transmission in there, they would have told you that you were wasting your time. Now, pretty much in 1/8-mile racing there's almost no clutch cars left.

"The first couple of heads-up races I went to everybody called it the slush box, and wondered what we could be thinking. And now we run an OEM Turbo 400 with a lockup, and we are as fast as the stick cars. We were the first OEM-type auto transmission in the five second zone in the quarter-mile in the NMCA.

"As we've increased the horsepower, they have been able to keep up and increase the size or strength of parts where it was needed in the transmissions and really kept us from breaking stuff," he adds. "We'd send our transmissions back after every 80 runs even though they were really still good, just because Jim and JC wanted to tear them down and see where they were getting any wear and if anything looked like it was going to fail. And that's how they would make their design changes and upgrades. It's a thin line to make them as strong as you possibly can while also as light as you possibly can so that you get the best of both worlds.

"We're to the point now where we've got the Powerglide transmissions going 100 runs, no damage, no breakage, no failures. We'll send them back to ATI for a look over and refresh. They will install some clutches, some new seals, and check for worn parts. We're keeping planetary gears a couple hundred runs. And that was the weakest link in any type of transmission. They are small and see a lot of load. We went 3.81 in the eighth mile with a Powerglide at 193 miles an hour in a 2,400 pound car. And now we've been as fast as 3.75 at 198 with a turbo 400.

Going forward, Beattie says ATI will only increase the rigors of the testing it does on all of its components before making them available to customers. And even after components are on the shelves, Beattie says testing will continue as he and his staff continually work to improve performance and keep up with the ever increasing demands of racers.

"The testing also helps us know exactly what we need to give a guy when he calls up and tells us what he's racing and what he's trying to do," Beattie adds. "I find lately that we are spending a lot of time talking customers out of something they don't need. Instead of upselling, I guess I'm pretty good at down-selling. But I would always rather sell three of the right thing than six of something and two be wrong. Even if it hurts our overall sales, we've got to make sure we only sell our customers the right thing.

"I know it's the way I'd like to be treated."

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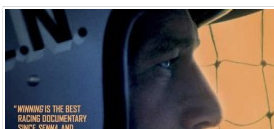
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