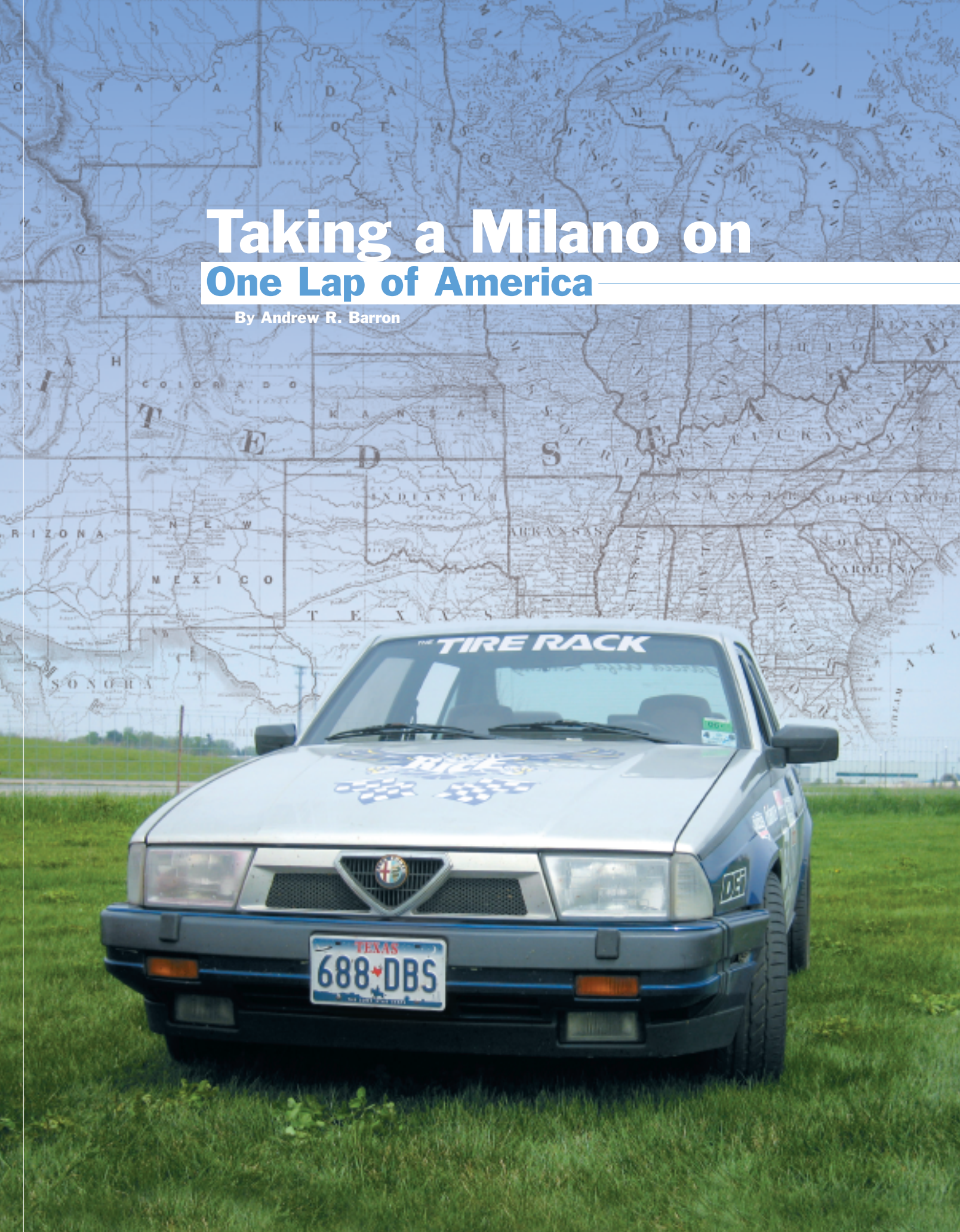
Taking a Milano on One Lap of America

By Andrew R. Barron



The Rice University "One Lap of America" Team

About a year ago a group of undergraduates at Rice University suggested I should teach a special topics course on automotive engineering with the aim of working on a real racecar. The Rice University student chapter of the Society of Automotive Engineers (www.ruf.rice.edu/~rsae/OneLap/index.html) had in the past competed in SAE-sponsored events such as building an off-road buggy, but that sounded boring and certainly nothing I was interested in. So I started to think about a suitable event to take a group of students to compete in.

Thinking about the choice of events I happened to be channel-surfing one night; when I alighted on the '70s movie, *Cannonball Run*. Based loosely on a real event, the film concerns a group of misfits racing across the Continental US against each other and the law. Although the movie has little to do with the real Cannonball, it started me thinking about the modern equivalent, the *Car and Driver* "One Lap of America."

The original Cannonball runs were replaced in 1984 by a legal version organized by the Cannonball's originator Brock Yates. Brock is Editor-at-Large and featured columnist for "Car and Driver" magazine and was responsible for the screenplays of both *Cannonball Run* and *Smokey and the Bandit II*. Trying to create a legal version of the Cannonball Run, Brock developed the format for the One Lap of America. The idea of the present event is to start and finish in the same location while driving to as many as race tracks to compete in timed trials at each track.

The rules for the entry are simple. The car must be street legal, you can only use one set of DOT tires for the whole event, you have to wear a helmet and approved fire suit, be a member of the Sport Vintage Race Association (the event-sanctioning body), and… well that is pretty much it.

Now once I suggested to the students that the One Lap could be just the event, they were enthusiastic, and although there were many more interested than could participate in the first year, I knew that time would sort out those who would be involved.

Part of the allure of One Lap is that the tracks are a long way apart, often necessitating all-night drives from one location to the next. Thus, it is not unusual to have a team of (up to three) drivers consisting of track specialists and those who drive the grueling road stages. A couple of the students, Damon Hattori and Brad Tonnesen, had had the necessary track experience; Damon even had extensive race experience. Others, such as Ben Kosbab and Lucas Marr, had experience working on cars and were interested in coming for the chance to crew and drive the road sections with me driving the tracks and sharing the road driving. So we had a goal, how to get a couple of cars and how to create a class to give the students credit for the event.

In my own time I dedicated two semesters to the class (http://python.rice.edu/~arb/Courses/msci_615_05.html). The first semester tried to teach the basics of tires, suspension, chassis design, handling, and aerodynamics. The second semester was to be a "laboratory course" with the final exam being the entry into One Lap of America! Now, don't you wish you were a student at Rice University?

The second problem was raising sponsorship to purchase the cars and the entry fees. In part this came from a longtime sponsor of my SCCA and vintage racing, First Community Bank

The Alfa gets towed after an off-road excursion

(www.firstcommunitybank.net). With their continued support it was possible to purchase/obtain the cars. Getting a car or cars that could hold more than two people and perform reasonably well on the track stages is an issue. Most One Lap entrants spend more on their cars than my annual racing budget, so we were never going to compete that way. Instead we just wanted to have something that would let us have fun and will let us finish the event. So reliable and simple to drive and work on were the keys to our choice. So why did we end up with the cars we did?

The first car chosen came about through a friend and Alfa specialist Andrew Garcia of Garcia Alfa Racing (www.garciaalfaracing.com). Andrew and I had co-driven his GTV6 in a SCCA six-hour enduro at Texas World Speedway. I had enjoyed the car and found it easy to drive on the track. It had the advantage of being rear-wheel drive and seating four (three in comfort with baggage), but the disadvantage of being Italian and therefore not known for its reliability. Andrew assured me that the GTV6 and its saloon sibling, the Milano, were actually good choices. In addition to being an Alfa specialist, Andrew is a true Alfa nut, his garden has more Alfas than flowers (much to his wife's chagrin), and he also drives a Milano on a daily basis and uses it for 2,000-mile holiday trips without a second thought. He suggested the Milano would be easier to use with its four doors and real boot. He also pointed out that the Milano was raced in IMSA over the GTV due to better aerodynamics. OK, so I was convinced, but where would we get a suitable car.

Enter Andy Kress of Performatek in Sherborn, Mass. Andy had a suitable 2.5L Milano Gold Edition that he had already done much suspension work on. The car had lived in the Northeast all its life resulting in more rust and gunk than is normally seen in Texas, but the engine was in good shape and the car's handling almost sorted. After purchase was agreed on, Lucas and fellow student Phil Szajda flew to the great white north over the Christmas break to collect the car and bring it back to Houston for work to begin. Their trip was worth a story to itself, but suffice to say it involved crashing into a "caution deer crossing" sign and having to be towed back onto the road. It also involved Lucas becoming friends with one of Ohio's finest who told him not to drive so fast in "that funny French car"! After the car arrived to Houston, work would start.

The Alfa had already been partially converted to a track car with upgraded bushings, but it was in need of a new cam belt and water pump before we could risk almost 5,000 miles roundtrip to and from the event. We had intended to fit a roll cage and work on the car set-up, however, events meant that we spent most of the time just getting the car running. The first job was to clean off the dirt and grime from the outside and the interior. The body panels were not bad except for some slight damage on the driver's side that had occurred on the journey to Houston and the rear wheel arches had been converted to rust as is typical of Alfas everywhere.

With the help of Andy Garcia, the students removed all the engine ancillaries that allowed access to the water pump and cam belt. Unfortunately, despite Andrew and my repeated warning to put a rag over the intakes so that nothing ended up inside the cylinders, one of the students dropped a screw down the #4 cylinder. Without knowing this, the car was made ready to run. Thankfully, the fuel rails had been drained so the car didn't start

Getting the car ready for painting.

on initial attempt. Instead there was a clunk and the engine only turned over once! Andrew's business partner Mike Keith investigated and found that the #4 exhaust valve had been snapped off and was sitting like a Hershey's kiss on top of the piston precluding compression. Disaster! We didn't have time to re-build the engine, so Andrew Garcia kindly donated a spare head from a 3-L engine from his ITS GTV6. With a working engine and various other ancillaries replaced, the car was ready for the paint shop.

Sterling McCall Toyota in Houston had agreed to supply the paint and do the work on both cars. Manager Harold Whittey had already arranged for some sample panels to be painted in the colors we had decided on, and supplied us with all the materials to prep the cars. The students spent several hours sanding and filling to get the cars ready for painting. The students had chosen a smart two-tone silver-and-blue (Rice colors) finish for the Milano. Although not a stock scheme, everyone agreed it is a great combination and suits the design of the car.

The second car I obtained was a 1988 Lotus Edition Isuzu Impulse. Not the most glamorous car but deemed reliable and known for its good handling. The Impulse had a complete engine build and thanks to Jamie Brooks, of BrooksSpeed Garage in Houston, had a roll cage installed. Like the Milano, the Isuzu was repainted a bright Dodge Viper Red.

With the cars as ready as we had hoped, it was off to the track to make sure nothing fell off! Lotus Owners of South Texas (LOST) is the local affiliated club for Lotus Limited (the National Lotus Club). LOST had arranged to rent the local test facility at the Houston Police Academy for a track day and were gracious enough to allow us to bring along the cars to test. The LOST track day showed that the Milano was mechanically sound— except for some hose clamps coming off on the fuel rail and that the lack of limited slip was going to be an issue. With only three days before leaving for the start of One Lap, some last minute work was accomplished. So finally we were off to start One Lap of America.

We left Houston at 1:30 am on Thursday. I drove the Isuzu through most of the night while my co-drivers slept. The Milano crew switched driving duties during the night. As dawn arose, we

All clean with Rice colors. The Milano looks fresh, but for how long?

finally exited Texas and stopped for breakfast at Andy's Restaurant—no relationship to either me, Garcia, or Kress!

We must have stopped at nearly every Conoco or Phillips gas station between Houston and South Bend, Indiana. For this we have to thank Alastair Donald the manager of Credit Card Enterprise at ConocoPhillips. The gas cards saved us significantly on the journey.

After the first 1,000 miles both cars developed ongoing problems. The right rear caliper of the Isuzu was rubbing on the disk and grinding it down. This was the start of an ongoing saga that was not resolved until the third day. The Milano seemed to have an intermittent misfire and had a major leak in the power steering. The former was fixed by firmly wiring down a loose connector to one of the fuel injectors. Feeding the steering rack a diet of fluid three times a day solved the second issue. Once again, thank you ConocoPhillips.

We finally arrived in South Bend, Indiana at midnight to the host hotel for the start of One Lap. In the hotel car park were several of the competition. It was at this point that we realized we had taken a couple of knives to a gunfight! There was more horsepower and more money displayed in that car park than should be legal.

First time on the track for the milano and Andrew Garcia is showing the students what the car will do.

The first day of the event was spent getting frustrated with a rather miserable receptionist at the Tire Rack. We were supposed to have tires donated by Yokohama (Isuzu) and Bridgestone (Milano), but Tire Rack seemed to have lost all record of them. Eventually it was sorted and we got them mounted. We were set—or perhaps not. The students then noted that they had not brought a race suit between them. I had visions of us all sharing my race suit for a week—gross! Once again, Andy Garcia came to the rescue and Fed Ex'd a couple of race suits for our collection the next day.

Prior to tech, we put all of the decals on the car. In addition to our numbers and the event sponsors, we had to artistically arrange decals from First Community Bank ($), Mobil 1 (oil), Yokohama (tires), Bridgestone (tires), ConocoPhillips (gas cards), Porterfield (brake pads - Isuzu), CarboTech (brake pads - Milano), PPG (paint), ProAm (air filters), and of course Garcia Alfa Racing (for everything else).

Day 3 of the adventure was actually the first day of the event. Starting in car number order, the Isuzu (#27) was placed in between a gaggle of Porsches and Corvettes for the first trial, a wet skid pad. While the Milano (#79) got to run almost last. The idea was to run two laps in each direction of a circular skid pad. The total time for the four laps was then used to determine a G-force. The students got suited up and ready for the run; neither car was too fast; however, we were not last. That was reserved for a Porsche GT (last year's winner) who forgot which direction he was going and did four laps in one direction! With the first event under our belts we packed the cars and headed for Indiana Raceway Park.

The format for One Lap is simple. You arrive at a track, unload your gear from the car, and line up in the hot pits. The cars are sent out in groups of three to five depending on the track

length and the expected lap times. The cars make a reconnaissance lap and line up in single file on the grid. Each car is waved forward and given the green flag. A 15-second gap is left between cars to limit the need to overtake slower cars. After three hot laps, the checker flag is shown and the cars return to the pits. The aggregate time of the three laps is used to determine the position. Points are awarded like NASCAR with 500 for 1st place, 450 for 2nd and so on.

Having arrived at the Indianapolis Raceway Park we replaced the offending brake disk on the Isuzu but it still rubbed —blast! With no choice, I got in the car and went out on the track. At the first braking zone I found that only the rear left brake was working, causing the car to try and spin itself. As a consequence my lap times were not great. In fact, the Milano was slightly better by a few tenths of a second despite a misfire in one of the cylinders! The second run was better for me in the Isuzu and worse for the Milano crew. Having decided to run without using the brakes and just use momentum through the corners, I dropped several seconds a lap on the next effort. Unfortunately, in the Milano, Damon was trying a little too hard and spun twice once in front of me and then again trying to follow me through a fast series of corners.

The Rice cars wait on the grid for their first run of the day at New Hampshire International Speedway.

Having seen a WRX being almost destroyed after hitting a wall, we were so happy to have survived the first event we made a dreadful mistake. We stopped for dinner and this meant we got to the hotel near BeaveRun Raceway in Pennsylvania (539 miles) at 5:30 am just in time to sleep for a couple of hours and get up for 8 am. With about two hours actual sleep and a hot shower, we were at the track and attempted to sort out the calipers. Buy this time, Ben and Lucas were able to remove and replace the brake caliper in nearly a minute. Obviously, we need to try for Le Mans next year!

Having raced at BeaveRun with Classic Formula Car Racing, I had a reasonable idea of the track. First session was not good since the brakes were still pulling the car in all sorts of unwanted directions. With Dremel™ in hand Ben ground the calipers down to stop the rubbing and freed up the sliders to allow free movement. They still rubbed a bit, but at least the brakes worked and could be trusted to stop the car in a straight line. Brad and the Milano managed to keep on track, but seemed to be having continued power issues. While sitting on the grid Brad was approached by one of the Viper drivers who started to tell him that he had a Milano at home and he loved the car. Coming from someone who was competing in a Viper with almost 1,000 bhp this was actually quite funny.

Tuesday night was oval track night. I had been dreading this and it proved as bad as I thought. Finding NASCAR a bore, I had no idea what to do. In contrast, Damon used his hours of following NASCAR to good advantage and put in a great time with the Milano. In fact, it appeared that Alfas are well suited to oval racing.

NASCAR was going to continue to be the theme, as a 433-mile journey to New Hampshire would put us at New Hampshire International Speedway at Loudon. We had the advantage of staying with Brad's parents who were wonderful hosts. How many other teams got to sleep in a soft bed, have a hot shower, and then come down to a home-cooked breakfast of bacon, eggs, and hash browns. This is what racing should be. What was even better was the homemade brownies that Brad's mother made and somehow got moved to the Isuzu and consequently devoured without the knowledge of the Alfa crew.

In addition to the oval New Hampshire International Speedway has a road course with some serious elevation changes. We had an interesting time trying to sort out the track. Andy Kress who we had purchased the Milano from came to meet us with a box of goodies. Brake fluid, T-shirts, and sundry spares for the suspension. Andy phoned a friend of his who races Loudon on a regular basis in a Milano and he gave us some key pointers. In addition, Andrew found the problem with the fuel injector connection that immediately gave the Milano even more power. Running on six cylinders is always better than five.

In the morning session (it must have been the presence of his parents) Brad who had done so well at BeaveRun had a spectacular spin, right in front of where his parents were watching. The afternoon went smoothly for us and Brad did a great job keeping the Alfa on the track. Saying goodbye to Andrew Kress, it was then off to West Virginia.

A new day, a new state and a new track: the Shenandoah Circuit at Summit Point Motorsports Park. In addition to the older racetrack, the owner has built a new highly technical track including a replica of the carousel at the Nürburgring. The morn-

ing session was not bad since Ben read the track map to me over the two-way radio while I drove, just like in a modern rally. It worked really well and got a better time than we should have done. The afternoon was marred by having seen a very bad crash on the approach to the replica Der Nürburgring. A WRX (what is it about these cars?) lost control and was briefly airborne before crashing into a tire barrier. The driver was fine, but the car was written off. With this image still fresh in my mind, I slowed down. Damon in the Milano did much better since he is significantly younger than I am, and therefore, braver (or is that dumber?).

Brad Tonnesen in victory lane at Loudon New Hampshire.

Once we were packed up, a short journey to the Mason Dixon Dragway was in order. However, Lucas put the wrong address into the GPS, so we took a rather circular route. We made it in plenty of time to get set up for the bracket drag. Here the goal was to set a target time and on each subsequent run match that run without red lighting (going before the green light) or breaking out of your time (being faster than your first time). Lucas did a great job, although the Isuzu looked a little out of its class lining up for the First drag run with a Red Viper with 1,000 bhp. On their first run, the Alfa boys braked at the wrong point (1/4 mile not the required 1/2 mile) so they had a very slow time and had to invent their target time. In the second run, the Milano and Isuzu ended up competing back to back, with the Milano winning. Damon did a great run, but Lucas thought he was going to break out so he slammed on the brakes, twice, and ended up well outside his estimated time. Italian style beating Japanese engineering.


The Rice University cars at Loudon New Hampshire.

Wednesday was the highlight for me. Virginia International Raceway (VIR) is a great track, and I have raced there before and done well. Both morning and afternoon went well for me in the Isuzu, but Damon was having problems with the rhythm of the track in the Milano. But that is what VIR is all about—rhythm.

Leaving VIR on a high we headed for the Carolina Rod Shop where they provided dinner and mounted our spare tire. This is a great place with wonderful service and some interesting cars being worked on. Each subject has a sign with photos describing the work that has been done and what is next. The cars varied from vintage to classic European and American muscle cars.

Thursday morning in Savannah, Georgia, started with rain, lots of it, and it continued all day. Going out in torrential rain with no traction at all (but then again neither did anyone else). While not really fast, Brad and I both had safe runs. Exhausted, we both tried to get some sleep in our respective cars prior to the afternoon run. Unfortunately, my rest was interrupted when Lucas came in for a snore! We ended the day on a drying track which gave us lap times that were better than we hoped.

After packing up wet equipment, we set off on the longest journey—768 miles to Nelson Ledges in Ohio. On the way, we were almost arrested for attempting to rob a Subway sandwich shop. Well, not really, but the workers at the store thought we were.

Brad and Damen, in the Milano, were getting fed up with the slow pace of the Isuzu. We were going the speed limit but obviously this was not fast enough for the Italian car. Ben, Lucas, and I suggested that they lead and gave them explicit directions. Of course, did they follow them? No. Soon after they took off in the lead, they took a wrong turn. Upon realizing they were not on the right road, Ben phoned them. "Have you been through the tunnel yet?" he asked. "What tunnel?" came the reply. So we pulled of at an exit ramp to wait for them to catch up with us. Sound like the tortoise and the hare?

As we exited the highway, we noticed a Subway sandwich shop. Let's go in their parking lot and wait, suggested Lucas. We

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drove into the dark parking lot and stopped outside the closed store. Looking into the Subway we could see three of the staff, none above 18, looking with worried faces at us. "I bet they think we are going to rob the place," commented Lucas as we watched the staff making hurried phone calls and diving behind the counter. Sure enough, after eight minutes, a police car arrived in the lot and stopped next to us. Pleasantries were observed and we explained we were waiting for some teammates. The cops were nice and laughing said that the store had been robbed the week before, so the kids working there were a little skittish. After reassuring the staff, the cops left. But soon returned after the staff phoned again. I guess they believed that a bright read Isuzu covered in decals was a good getaway car! The cops escorted the staff to their own cars and as they came back, the Alfa arrived on the scene. The cops too needed no persuasion to pose for photos with the cars, although one of the staff was still a little worried in being asked to take the photo!

Instead of using the directions, we typed in the address provided in the route map for the track. We arrived outside someone's house and sat there quite confused, until a lady in a pickup truck said, "Are you looking for the track?" It turned out this was the owner of the track's house and luckily she was just leaving to open the gates. So we followed her the 30 minutes to the track. Talk about luck of the Devil.

I had not been to Nelson Ledges since testing a Formula Ford there five years before. It had improved and there was actually a nice bathroom—well not really, but the shack was better than the hole in the ground that was there before. The track was much improved, but it is still bad. During the morning run, I lost concentration, but in the afternoon I did much better. These runs, more than any other, showed me the difficulties of single-lap qualifying. So next time I see an F1 driver screw up, I will not be as quick to judge.

A short, drive back to South Bend, Indiana, allowed us to get a decent night's sleep and dinner at Bob Evans. Then it was back to Tire Rack for the last event, a dry skid pad. In the Alfa, Brad did well, and in the Isuzu, Ben put in a great time, only to have a 10-second penalty levied on him for hitting a cone. Ten seconds doesn't seem bad until you realize that his run was about 40 seconds total. This final event dropped us several places in the overall running, but we kept our class position. The Alfa didn't change positions. After the final event was a banquet with a great catered lunch.

Overall, we finished 80th (Isuzu) and 90th (Milano), in part due to having cars that were not prepared as fully for the event as the competition. Also the students needed more lead time to get better acquainted with the car, in part due to some of our own screw ups. But that is racing. Not being as familiar with the car, as most competitors were with their own, was a distinct disadvantage.

In summary, the cars actually performed well considering the finances we had at our disposal and the lead time for preparation. The Isuzu needs to go in a diet and get better brake cooling as well as larger wheels. The Milano is almost there just needing to sort out the alignment and hence the handling. The students are talking about more horsepower—but that is not the real issue—it is learning your car, improving your driving, and getting the handling so you can predict how the car will respond under different conditions.

One of the funniest comments during the week was as Nelson Ledges co-organizer Brock Yates Jr. pulled me to one side to congratulate me on the idea of getting a group of students together for the event. He then proceeded to tell me, "I can't believe you brought an Alfa, and I really can't believe it finished!" Finished it did, and made it back to Houston. With a total of over 5,000 miles including seven race tracks, two skid pads, an oval, and a drag strip, the Milano did a great job. None of which could have been done without our sponsors and in particular Andy and Mike at Garcia Alfa Racing. They put in many hours and the only reason the car made it is because of their dedication.

The Cannonball One Lap of America is considered one of the 100 things to do before you die. Well, we have been there, done that, and the students indicated that we need to go back for more! So look for the blue–and–silver Milano racing around the country next May. We look forward to meeting you. ☘

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