

In This Issue:

- Lotus Handling of One Lap of America
- Magazine Watch
- Manufacturer of the Year - Group Lotus plc
- Across The Pond - Gordon Morris
- Classic Team Lotus Quarterly Report

Late September 2005

Volume 33, No. 7

Lotus Handling of One Lap of America

By Andrew R. Barron

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 race car. The Rice University student chapter of the Society of Automotive Engineers (RSAE) had in the past competed in a SAE sponsored events such as building on 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 70's 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 entry rules are simple. The car must be street legal, you can only use one set of DOT tires for the whole event, you have to be a member of the Sport Vintage Race Association (www.svra.com), wear a helmet and approved

fire suit, and, err... well, that is pretty much it. In other words, there are very few rules!

Now once I suggested to the students that the One Lap could be just the event for the class, 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



The Team (L-R: Lucas Marr, Ben Kosbab, Andrew Barron, Damon Hattori, and Brad Tonnesen).

Tonnesen, had the necessary track experience, and Damon even had extensive race experience. So it was decided they should make up one team. 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 (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 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 endurance race 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 4 (3 with comfort and 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). He suggested the Milano would be easier to use with its four doors and real boot. Enter Andy Kress of Performatek in Sherborn, MA (www.performatek.com). Andy had a suitable Milano that he had already done much suspension work that would make it suitable for One Lap. This car was to be kept for subsequent projects by the RSAE.

Photograph Courtesy of Andrew Barron

One Lap (Continued on page 8)

ONE LAP *(Cont. from page 1)*

So with one car chosen what to do for the other one? Being a Lotus fan, I had long ago thought of doing One Lap in a Elan M100, but sold it a few years ago. Despite the obvious benefits of using either of my daily drivers (Esprit S4 and Elise) I started to look for an alternative. In a crazy moment I thought I might be able to get a 1970's Elite/Eclat to finish the event. (Still not sure where my brain was that day.) I happened to mention possible choices to friend and Lotus Ltd President Mark Pfeffer. It turned out part of Mark's 'wooing' of his wife included giving her and a friend a lift home in his Lotus Edition Isuzu Impulse.

The Lotus Edition of the Isuzu Impulse came about during GM's tenure as owners of Lotus. As part of its engineering business Lotus had performed various upgrades to the wedge-shaped coupe. Unlike many other consulting projects that are often held secret, the work with Isuzu was openly displayed through "Handling by Lotus" badges and the use of the Lotus name in the sales literature. The first generation Impulse had a conventional front engine rear wheel drive set up, with the turbo model using a 2.0L single overhead cam engine. The second generation Impulse shared the front wheel drive 1.6L DOC engine and gearbox with the Lotus Elan M100.

The first generation Impulse (Piazza in UK and Japanese markets) had an additional link to Lotus through its designer Giorgetto Giugiaro, also known for being the designer of the original Esprit shape. Few Impulses remain on the roads and while not being the easiest to get parts for, the Impulse shows typical Japanese engineering and structural and mechanical strength. Being essentially disposable would also mean that any modifications for the track (or damage resulting on the track) would not be an issue that would deter its use.

A high mileage example was obtained from Virginia along with typical Northern rust. As such the Isuzu needed far more than the Alfa.

The first task was to remove a rather moldy carpet and track down leaks in the driver's side floor. This appeared to be due to a large hole under the floor mat above the exhaust where water and heat had combined. After the interior was stripped the next task was to remove the engine and gearbox to allow for an engine re-build. The engine had over 120k miles on it with an uncertain history. Under the supervision of Jamie Brooks at BrooksSpeed Garage, the students accomplished the engine strip down and re-build. The braking was improved by the use of Porterfield brake hoses and pads.

After removal of the engine it was clear that rust had attacked various panels in the engine bay. Jamie welded replacement patches. We then used about a dozen cans of rust converter after which we undercoated the entire car with a rubberized paint. Inside the car as much of the sound insulation (ca. 40 lbs) was chipped away. In addition to the weight savings, the main reason for this was to provide bare metal for welding the roll cage and race seat brackets. A race seat air filter and steering hub were donated by ProAm a Houston based race and performance shop (www.proamauto.com). The fitment of the seat required the removal of the bulge in the floor for the catalytic converter. Who needs that on a track car anyway?

Tires were donated by Yokohama with the assistance of Jeff Miller who was a great help in choosing the correct tire type as well as advise in the set up of the car. Many of you would have met Jeff at LOG 24. ExxonMobil provided all lubricants as well as a large supply of T-shirts. Two of the most useful sponsorships were from First Community Bank who made the entry fee possible, and ConocoPhillips who provided gas cards with almost inexhaustible credit. For this we have to thank Alastair Donald, the Manager of Credit Card Enterprise at ConocoPhillips.

The Impulse was originally red, although the color had faded over the years. So a re-spray was in order. Sterling McCall Toyota in Houston (www.sterlingmccalltoyota.com) 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, although Harold's great crew made the students finish the cars to a much higher level than

we had originally intended. Their opinion was that if they were going to work on the cars they should look their best. So after a whole day extra work the cars were ready for painting. The students had chosen a smart two tone silver and blue (Rice colors) finish for the Alfa while Dodge Viper Red was chosen for the Isuzu.

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) 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 Alfa and Isuzu to test the cars.

The LOST track day showed that the Alfa was mechanically sound – except for some hose clamps coming off on the fuel rail, but it indicated the ride on the Impulse was too high and the sway bars were not working. With only 3 days before leaving for the start of One Lap, new metal down link bushings were fabricated and 1" removed from each spring to raise the spring rate and lower the car.

So finally we were off to start One Lap of America. We left Houston at 1:30 am on Thursday after a delay in packing and sorting some final issues with the Alfa. I drove the Isuzu through most of the night while my co-drivers slept. As dawn arose we finally exited Texas and stopped for breakfast at Andy's Restaurant, a cheap fast food joint that appears to be populated by old age pensioners.

We must have stopped at nearly every Conoco or Phillips gas station between Houston and South Bend, Indiana. The gas cards that ConocoPhillips provided saved us significantly on the journey. After the first 1000 miles both cars developed ongoing problems. The Impulse showed a vibration at ca. 20 mph. We incorrectly diagnosed this as the rubber bushing that holds the carrier bearing for the drive shaft and arranged to have one shipped to New Hampshire. As we were leaving a rest stop I noticed a second and more worrying problem. The rear right caliper 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 Alfa seemed to have an intermittent misfire and 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 at midnight to the host hotel for the start of One Lap. In the hotel lot were several of the competition. It was at this point that we realized we had taken a



Photograph by Andrew Barron

The Isuzu Impulse with its all-important "Handling by Lotus" badge dwarfed by sponsors and numbers.

ONE LAP *(Cont. from page 8)*

couple of knives to a gunfight! There was more horsepower and more money displayed in that car park than should be legal.

After a great nights sleep (the last for a week), we got up early and went for breakfast and met the co-organizer of the event Brock Yates Jr. He immediately apologized for putting the Isuzu in SSGT2small bore (under \$40k) as opposed to economy (under \$20k) even though it was only \$17k when new! Our competition turned out to be a brand new track prepared Lotus Elise, a Dodge Daytona, a Toyota Supra, a third generation Mazda RX-7 turbo and an ultra-light Seven replica. Not one of these was stock and all had clearly been prepared with just this event in mind. They even had trailers for all their stuff!

The first day of the event was spent getting frustrated with a rather miserable receptionist at Tire Rack. We were supposed to have tires donated by Yokohama (Isuzu) and Bridgestone (Alfa), 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! After a few phone calls I contacted Lotus Ltd member and Walker Racing's Marketing Director Gary Dausch and obtained suits for the students. What other club than Lotus Ltd can get you equipment from a top CART team?

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 FirstCommunityBank, Mobil 1, Yokohama (www.yokohamatire.com), Bridgestone (www.bridgestone.com), ConocoPhillips, CarboTech (www.carbotecheng.com), Porterfield (www.porterfield-brakes.com), and PPG. We also had enough T-shirts for the week so we decided which sponsors T-shirts would be worn which day. At least we looked like we knew what we were doing!

As we waited, Impulse owner AJ came over to chat. In addition to being a nice guy he had lots of really interesting suggestions and information on the Impulse. The Team finished the day with a dinner at Bob Evans talking strategy and oblivious of the torture ahead.

Day 3 of the adventure was actually the first day of the event. Starting in car number order, the Isuzu was placed in between a gaggle of Porsches and Corvettes for the first trial, a wet skid pad. 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, got ready and left for Indiana Raceway Park. On route we collected spare brake disks for the Isuzu and stopped at Walker Racing to collect enough race suits for everyone to have one. They were even approximately the right size! Gary gave us a quick tour around Walker Racing's facilities (www.walkerracing.com). Here is a race shop we could all be envious of. The area where the CART and IRL cars are prepared is so clean it's almost clinical.

The format for the track events 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 seconds gap is left between cars to limit the need to overtake slower cars. After three hot laps the checkered 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 (www.irponline.com) we replaced the offending brake disk but it still rubbed! With no choice I got in the car and went out on the track. At the first braking zone I found that only rear left brake was working causing the car to try and spin. As a consequence my lap times were not great. In fact the Alfa was slightly better by three tenths of a second! The second run was better for the Isuzu and worse for the Alfa. Having decided to run without using the brakes and just use momentum through the corners I dropped over five seconds a lap on the next effort. I actually managed to post one lap faster than the Elise. Not bad for a 1988 Isuzu with 50 less bhp and 1000 more lbs. Unfortunately, Damon was trying a little too hard and spun twice. Once in front of me, and then again trying to replicate my line through a fast corner.

Having seen a WRX almost destroyed



Working on the brakes on the Impulse became a routine activity.

Photograph Courtesy of Andrew Barron

after hitting a wall, we were so happy to have survived that we made a dreadful mistake. We stopped for dinner. This meant we got to the hotel 539 miles away near BeaverRun Motorsports Complex (www.beaverun.com) in Pennsylvania at 5:30 am - just in time to get up at 8 am. That was the last time we stopped for dinner. After that, as many meals as possible were courtesy of the ConocoPhillips gas card!

With about two hours sleep and a hot shower, we were at the track and attempted to sort out the calipers. By this time, Ben and Lucas were able to remove and replace the brake caliper in nearly a minute. Eat your heart out F1.

Having raced at BeaverRun with Classic Formula Car Racing (www.classicformulacarracing.com), founded by former Lotus Ltd President Kyle Kaulback, I had a reasonable idea of the track. First session was bad since the brakes were still pulling the car in all sorts of unwanted directions. Ben ground the calipers down to stop the rubbing and freed up the sliders to allow movement. They still rubbed a bit, but at least the brakes worked and could be trusted to stop the car in a straight line. The afternoon session was much better, but my attempts to put in a series of good laps was frustrated by a CRX. It's surprising how big a CRX can be when it is driven in the middle of the track!

Tuesday night was oval track night (www.lan.casterracing.com). 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 Alfa.

NASCAR was going to continue to be the theme, as a 433 mile journey to New Hampshire would put us at New Hampshire International

ONE LAP *(Cont. from page 9)*

Speedway at Loudon (www.nhis.com). We had the advantage of staying with Brad's parents who were wonderful hosts. We got to sleep in soft beds, 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. Better yet were the homemade brownies that Brad's mother made (and which somehow got moved to the Impulse and subsequently 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. Andrew Kress came to meet us with a box of goodies. Brake fluid, T-shirts and sundry spares for the suspension. Andrew phoned a friend who races Loudon on a regular basis and he gave us some key pointers.

The Isuzu rear right brake was still sticking slightly. But after a frustrating morning I decided to call Porterfield. During the conversation their technical guru said, "Oh you may have to fit the pads by filing them down." Now they tell us! A quick grind of the pads and they moved again. We have brakes that work! Or rather we did for the first two laps since the front brakes now got hot enough that gas was trapped causing 'kick-back'. A lesson for next year: put cooling ducts on the front brakes.

In the mornings session a street legal (don't ask) Radical went into a tire wall due to an Evo dropping coolant onto track. And it must have been the presence of his parents, because Brad, who had been so steady at BeaveRun, had a spectacular spin. The afternoon went smoothly. Good news for us was that the Dodge Daytona in GT2 retired. In the afternoon we ran a different track configuration including NASCAR turns 1 and 2. Oh no, more ovals!

It was then off to West Virginia via an Isuzu dealer to collect a new carrier bearing in an attempt to get rid of the vibration. Strangely, they had no idea what the car was. Finding places that are not on the route directions was helped by the use of a GPS system that resided in the Alfa – causing Lucas to christen then 'Team GPS'. As it happened the GPS came in doubly useful that night.

As we traveled through New York City and some of the worst roads in the world (there are potholes the size of an elephant) we hit something big. Maybe it was an elephant? We never worked out what it was, but it was furry and wasn't alive after we hit it. A quick stop

didn't reveal any damage. However, just as we started off again the speedo took a nose dive. Once again we stopped and looked under to see black stuff dripping from the gearbox. Oh no! But it was not fatal since the black was grease and tar from road with a little bit of oil and lots of water and possibly blood! But we did find out that the speedo cable was nicely snapped. After that we used the GPS as a speedo.

A new day, a new State and a new track; the Shenandoah Circuit at Summit Point Motorsports Park is a great facility (www.summitpoint-raceway.com). In addition to the older racetrack the owner has built a new highly technical track including a replica of the carousel at the Der Nurburgring. As we approached the front gate the Isuzu's horn just



Andrew at speed at New Hampshire International Speedway.

started sounding without any provocation. With everyone looking at us we pulled the car over and turned off the engine, the horn still blared. As I got out it stopped, then started, then stopped. Getting underneath the front of the car to reach up and pull the connections out it started again, right in my ear. Now deaf, I was able to pull out the wires to find that the wire for the push-to-talk button on the in-car two way radio that had wrapped around the steering column and caught the horn push connectors.

With a car that was actually quiet again, Ben and I fitted the new carrier bearing in the drive shaft in 45 minutes with Lucas handing tools under the car. Unfortunately this was not the cause of the vibration. Later on it was found to be due to not adjusting the Panard bar after lowering the rear suspension.

The morning 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. Seeing a very bad crash on the approach to the carousel marred the afternoon. 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. The Alfa did better since the students are younger and braver (or is that stupider?).

Once we were packed up, a short journey to the Mason Dixon Dragway (www.mason-dixondragway.com) 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 1st run with a 1000 bhp red Viper. In the second run the Alfa and Isuzu ended up competing back to back, with the Alfa 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. Oh well, but at least we got out of there early for once.

Wednesday was the highlight for me. Virginia International Raceway (www.virclub.com) is a great track and I have raced there before and done well. However, VIR is actually three race tracks in one. The North and South courses can be run independently, but are also linked to make a 4 mile road course of startling flowing corners.

Although we were running the two short courses in the morning (neither of which I had run) the results were pretty good and we were moving up the placing. The Isuzu was at its best handling a series of consecutive corners. I was so happy with the morning run that I forgot to fill the gas tank. We didn't run out of gas, but I found out that on long sweeping right hand corners – of which VIR has several – the Isuzu would have pick-up problems when the gas tank is less than 1/4 full. We were left wondering what could have been done with a full tank.

The Impulse was hooked up and it was easy to push it to the limit of traction. On the grid a Corvette and Daytona Cobra replica both requested they go ahead of what was obviously a slower car, ie., me. However, on the warm up lap I knew this was going to be fun. Whereas they were both finding their way, I knew the track and had already planned a strategy. The green flag dropped and I was off. Once the first few turns were accomplished I was climbing the 'Climbing Esses' flat out, and looking at

Photograph by Andrew Kress

ONE LAP *(Cont. from page 10)*

the Corvette in front slowing for the turns. By the time we were coming back to start-finish I was on his tail and making the pass into turn 1. The Daytona Cobra was taken on the second lap with about the same ease. Now this is how it should be done.

Brock Yates Jr. and one of the flaggers suggested to the students that the Isuzu was race prepped or modified for racing. After being assured it was stock, they remained amazed the car could put in times far better than Corvettes and Mustangs. As I came into the paddock and got out of the car one of the Mercedes Teams came up and with mock seriousness said, "We don't want to see any of that stunt driving!" I must admit I was rather taken aback until they burst out laughing and continued "you were pushing that thing harder than anyone else!"

Leaving VIR on a high note we headed for the Carolina Rod Shop (www.carolinarodshop.com) 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 at Roebing Road Raceway (www.roebingroad.com) started with rain, lots of it, and it continued all day. Going out with no traction at all (but then again neither did anyone else) I was only helped by the advice of ConocoPhillips' Alastair Donald, who was a works Vauxhall rally driver. Sitting over a beer prior to One Lap Alastair helped me get an understanding of rally driving. "Just keep the steering wheel pointed in the direction you want to go and keep your foot on the gas" was his lesson for off-road and rain driving. I was amazed it worked. While not really fast I was catching the other cars in my run group. Brad had an equally good run in the Alfa. Exhausted, we both tried to get some sleep in the cars prior to the afternoon run. Unfortunately, Lucas came into the car and immediately started to 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. Brad and Damon, 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. Did they follow them? 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 off at an exit ramp to wait for them to catch up with us. Sound like the tortoise and the hare?

Lucas suggested we wait in a parking lot. We drove into a dark lot and stopped outside a closed Subway sandwich shop. 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 8 minutes a police car arrived in the lot and stopped next to us. We explained that we were waiting for some teammates. The cops were nice and explained that the store had been robbed the week before so the kids 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 red Isuzu covered in decals was a good get-away car! The cops escorted the staff to their own cars as the Alfa arrived. The cops took 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 to the track, we typed in the address provided in the route map. We arrived outside someone's house and sat there quite confused, until a lady in a pick-up truck said, "are you looking for the track?" It turned out this was the track owner'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 5 years 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 a F1 driver screw up I will not be as quick to judge.

A short drive back to South Bend, Indiana allowed us to get dinner at Bob Evans and a decent nights sleep. Then it was back to Tire Rack for the last event, a dry skid pad. Brad did well in the Alfa and Ben also put in a great time in the Isuzu, 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 only about 40 seconds total. This event dropped us several places in the overall running, but we kept our class position. The Alfa didn't change positions.

We finished 80th overall and 5th in class with the Impulse and 85th overall and 18th in class with the Milano. Our results were due to having cars that were not prepared with enough lead-time for the event, and to some of our own screw-ups. But that is racing. Not being as familiar as most competitors were with their cars was a distinct disadvantage.

The students are talking about more horsepower, but as any Lotus owner knows that is not the real issue. It is about learning your car, improving your driving, and getting the handling so you can predict how the car will respond under different conditions.

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 on a diet and get better brake cooling as well as larger wheels. The Alfa is almost perfect - just needing to sort out the alignment and hence, the handling. I would go with the Yokohama tires again for their grip and performance (hint hint).

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! But what about doing it in a 'real Lotus' you ask? That would be my eventual goal given suitable sponsorship or possibly a dealer backed effort (another big hint). If I can do as well as that Elise entered this year with an Isuzu - albeit improved with Lotus handling - just think what the results could be in an a true Lotus? Until then we are continuing the development of the Impulse and Milano through the program at Rice University and seeking sponsors for next year's effort. 🍀



"Now just think what we could do with an Elise?" Barron contemplates while waiting for the start of his run at New Hampshire International Speedway