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THE BUILD SHEET
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TSO Point Series Challenge at the BPG Buick Horsepower Nationals

Mike Lyons
8 Second Turbo
TSO Class

The Buick Performance Group

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Buick Performance Group
Mission Statement

The Buick Performance Group (BPG) is a non-profit membership organization dedicated to the performance, preservation, maintenance and restoration of Buick powered performance cars. The BPG offers a member focused, family oriented community environment that encourages and promotes: (1) the sharing of information; (2) the development of new products; and (3) interaction and participation between all members.

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THE BUICK 350....

By: Phil Green

The Other Buick Motor.

In 1968 Buick put it's first 350 on the road. It was used in countless applications to include some Jeeps in the early 70's. These motors graced many different car models into the early 80's

The 350 was one of Buick's foundations. Although not seen as a performance engine. These motors are always over shadowed by it's larger displacement brother the 455.

There are some people that do not give the 350 a second thought. There is a select few that want to see it succeed in the performance department and to show other people it has true Buick power.

What does it take to build a healthy 350.

As many people say it cost the same cubic dollars to build a 350 as it does a 455 so it is all based on what you feel is the ideal motor for your car. In my case, I felt I would use the motor I had and see what could be done.

It is pretty amazing how simple it is to build a healthy 350. In this article we will go over a motor built by PAE Enterprises and the power they were able to provide out of our workhorse Buick 350.

The 350 we used for this build is a 70 sp 350 from a 70 GS.

The Short block- Do you really want

The thing that you really need to know is that this motor uses basically a stock bottom end.

The Crankshaft was cut10/10. This motor also incorporated the use of Cap screw rods. The cap screw rods are regarded as the better rod offering by Buick. These rods were used during the 1973 production year and lasted till the end of production of the Buick 350 in the early eighties. With forged pistons being of limited supply due to TRW ending there forged Piston line for our 350's. We decided to use off the shelf Hypereutectic pistons. A goal of around 9.5 to 10 to 1 compression was our goal. This motor produced 9.6 to 1

TA performance grooved cam bearings were installed and installed TA performance lifters and used a Poston GS111 camshaft.

Photo of Assembly while at PAE Enterprises

Where Does the power come From! - The Heads!!!!

Most people know that when building motors that spending time on the heads is very important. This motor was build on this same premise. If you spend money on one specific area of the motor you should focus first on the heads.

The Heads on this 350 spent a large amount of time being ported and polished. The Engine builder took a sets of heads first to see how far the casting would allow him to cut. With this information he proceeded to do the heads on this 350. The valves used in this combination were a set of custom oversized intake and exhaust valves. These heads flowed in the 280 intake range and 201 Exhaust range.

Watch out for those little 350's they make pretty good power!!!

What kind of power did it

With a motor with 9.6 to 1 compression a great set of cylinder heads a TA Performance stage1 intake with one inch four hole spacer and 850 street demon carburetor. This 350 motor produced 449hp and 447 Tq. This motor could have easily produced more power by raising the compression and adding a single plane intake unfortunately the single plane intake is not produced by anyone at this time so we are relegated to a dual plane intake.

449 hp Buick 350 on the engine dyno at PAE enterprises.

A big thanks To Pae Enterprises.

I would like to thank Jim Burek at PAE Enterprises in El Paso, TX for working with me on this project. He was very instrumental in helping me to determining the build up of this 350. If you are interested in such a build he can be contacted on the Internet at www.paeenterprises.com

P.A.E.
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Buick Vendors used for motor build

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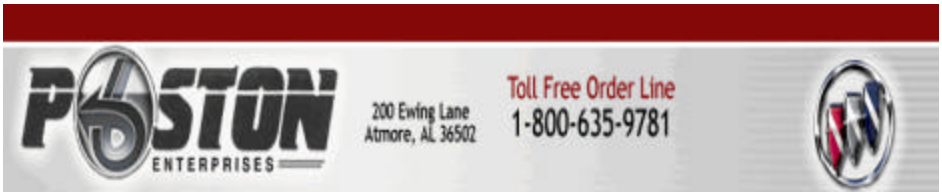

How to Detail Your Car at a Show Like a Pro in Minutes

By Scott Ellis

Throughout the course of our business, we have the opportunity to attend many car shows to demonstrate and market our products. The shows that we go to might be a casual cruise-in, a local or a national meet. Regardless of the type of show - there is always one thing that stands out – a nicely detailed car!

Your ride might be a "driver", a concourse-quality "trailer-queen" or even a racecar. No matter what you drive, there is no doubt that a detailed car that "pops" grabs your attention. And who doesn't like to drive a nicely detailed car? And if you are a gear-head like me, yes I have a great job! Some of these shows are meant to be just "fun", while others are highly competitive. For example at the Mid America Truck show they have a show and shine. All of these "Big Rigs" are working trucks. The judges actually use white gloves! These guys even wax the inside of the frame rails – and detail the tires inside the tread. I couldn't fathom such detail until I attended the event last year with our Canadian distributor Stephanie Gauthier who is well known in the Big Rig Show and Shine circuit. They start detailing their rigs the week before the show.

Assuming that you don't have a week to dedicate to detailing and staging a car at a show and the judges aren't using white gloves, I will attempt to share with you tips and techniques for prepping your ride on site at the show. Now, your car might never see water and be towed to the event in an enclosed trailer, or it might be a cruiser and you drive it – the process is about the same - and can look equally nice – it's all in the details! Let's assume that we are starting with a fairly clean surface - there is no sense in putting wax and dressings on dirty, soiled or otherwise contaminated surfaces.

Start with the exterior. Think of detailing your vehicle like painting a room – always start from the top down. The reason for that is if there is any overspray from wax or dressings, you can catch them as you work your way down the surfaces of the vehicle.

If you have a convertible or vinyl top, it's time to dress it! Let's talk a little about dressings here. For the most part, there are basically two kinds of dressings for vinyl, rubber and plastic – they all are either water based or solvent based. You will want to use solvent based dressings for the exterior of your ride – solvent based dressings won't wash right off and fall apart like water-based dressings will, and in my opinion give a richer, deeper luster. As well, a solvent based dressing, like our Super Blue will do a better job for conditioning and UV protection. I always suggest dedicating an applicator to your solvent-based dressing. The reason for this is that you want to do this as efficiently as possible and minimize any clean up of overspray. Start with spraying small amount of dressing on the applicator and wipe the entire top from front to back. Now – this is where some people stop and they get streaky-looking results. To eliminate this – repeat the process going from side to side, front to back. This crisscross technique ensures even coverage and eliminates any chance of getting those dreaded streaks when it dries.

If you don't have a convertible or vinyl top, start with a quick detailer / spray wax and a clean microfiber towel on the roof surface. Before you begin, let's talk a little bit about your quick detailer /spray wax and microfiber towel. To get optimum results, you will want to use a quick detailer / spray wax that will not streak. Some will, given the humidity and temperature when they are applied – the bottom line is you want to enhance the appearance of your ride – not add smears or streaks. Also look for a quick detailer / spray wax that contains a small amount of carnauba – as an added benefit you will also be extending the protection of any existing wax you have on your ride. We also recommend using a clean microfiber towel dedicated to this purpose.

When using your quick detailer / spray wax – a little goes a long way. Just spritz the product lightly. Other than adding more protection and "pop" to your surface, it will also serve as a lubricant helping to safely float off dust and grime. Our natural tendency is if this much is good, more is better, right? Just like me with laundry detergent – wrong! All you end up doing is wasting product and making a mess.

The reason that we recommend a microfiber is that if used correctly, it will not scratch the surface of your ride. Don't treat the microfiber towel like sandpaper – wipe gently, turning the towel over frequently - let the towel do the work. You won't be adding any more shine or luster my rubbing hard, and even a microfiber can scratch your paint if you rub hard enough. Just by turning the towel over frequently and wiping off any excess it will easily collect any dust, road grime or bug splatters. I usually concentrate on a concentrate on a 2-foot by 2-foot area at a time – the old cliché applies here – inch-by-inch life's a cinch! Do your entire surface of the roof.

Next, let's move down to the glass with your quick detailer / spray wax. Now, some of these products don't work well on glass, but the good ones will, like our Body Shine Showroom Spray Wax. Spritz a little on the glass surfaces, then wipe with a microfiber towel. The microfiber will make it a snap to clean up any contaminants like bug splatter if you drove to the show, and they are highly absorbent to suck up any excess detail spray. Your quick detailer / spray wax will make your windows "pop"!

Now is the time to start with the front part of your ride. Start at the hood and continue to work your way down. After the hood is wiped off, I move to the front of the vehicle. Repeat the same process, paying particular attention to the nooks and crannies of the grill and other trim of the car, including the headlights and grill. Staying with the front part of your ride, I then start on the front fenders. Repeat the same process. Don't worry about any vinyl, rubber or plastic trim; I usually save that for last. Ensure that you hit the chrome with your quick detail / spray wax as well as any painted surfaces. At this point – take a step back, check it out and admire your work – things are starting to come together after only a few minutes!

Next, move to the back of the vehicle. Start on another big surface - the trunk lid. After the trunk is done – continue on to the rear of the vehicle, again doing all painted and chrome surfaces. Next, move on to the rear quarters. I usually then will do both doors and surfaces in between the front and back last.

Now is the time that you want to dress the rubber, plastic and vinyl trim on your ride. Again, I apply the product with an applicator instead of spraying it on – it saves clean up time. Don't worry or fret if you get any of the dressing on the adjoining painted or chrome surface – just wipe it off with your microfiber towel!

After dressing the trim on the body of your ride, move to the wheel wells. Yes – the wheel wells. Use your dressing to spray under the wheel wells to get it to look like new. It will easily cover up any dust or dirt that you might have accumulated driving to the show or parking at the show and it will look like new! Next hit your tires. There is nothing better looking than fresh-dressed tires - remember - it is all about the details! Again, I suggest dressing wiping the tires with an applicator for two reasons. First, you will minimize any clean up from overspray. Secondly, we all have personal preferences about shine and finish – wiping the product on will allow you to get the exact finish that you desire – the heavier that you apply it the shinier the surface.
As a last step, use your quick detailer / spray wax and microfiber towel on your rims/wheels. This last step allows you to wipe up any excess dressing off your wheels.

Take another break and step back and admire your work. Next – let's look at the interior.

Start with cleaning the interior glass. If needed, use a streak free glass cleaner and a microfiber towel dedicated to cleaning glass. Remember to clean up any overspray on the dash and door panels. Using your microfiber towel, wipe any dust off the dashboard, rear deck lid and the rest of your interior trim. After wiping the interior down, open the door and pay attention to the jambs. Using a quick detailer / spray wax, spritz the surfaces and collect any grime that might be present. As a final touch, use an aerosol touch up dressing for hard to reach places, like our Dash Vent Magic to dress those hard to reach areas like the conduit that carries wiring for power windows and locks. It will make them look like new!

Open the hood and trunk and wipe down those compartments. Use your spray wax / quick detailer if needed. Pay attention to the seams where the hood and trunk meet the body – on both sides of the panels – remember - it's all in the details!

Grab your lawn chair, get a cold beverage and admire your ride – and watch as everyone else does.

Scott Ellis is from Jax Wax Distribution Systems and is responsible for distributing Jax Wax Car Care Products retail worldwide. Jax Wax Car Care Products are widely used in commercial businesses such as detail shops, body shops, and auto dealers. Jax Wax is now packaging its products in smaller quantities for the consumer market. You can get fast, commercial quality results by doing the detail work yourself. For more information, go to www.jaxwax.com or call 877-7JAXWAX.

Keeping it Simple:
Straight Talk about Dressings for Rubber, Plastic and Vinyl

By Scott Ellis

Ever roll into your local auto parts store to get some car care supplies, for example - dressings for tires, trim or your interior? With the vast array of products available, it is confusing to say the very least! Considering your choices, combined with all slick packaging, hard to see sizes, and pretty pictures – all these products are competing for your hard earned dollars. The result is confusion of what product to buy for what application. Do you use the same product to dress and protect tires as you do for your leather seats? Let's keep it simple, folks! This isn't rocket science - we're talking about dressings here. Hopefully this article will give you some insight into the choosing the right product for the right job.

Basically, there are two kinds of dressings – Water Based Dressings and Solvent Based Dressings. So look at what we've done here – grouped all of the dressings into two options. I don't know about you, but I can get my arms around 2 choices pretty easy. We all like keeping things simple. Both Water Based and Solvent Based dressings have their rightful place and use, and have different properties, pros and cons.

In keeping with our "simple" theme and as a general rule of thumb, here's the skinny: Use Water Based dressings on the inside of your ride and Solvent Based dressings on the outside. Pretty simple, isn't it? Why the inside / outside choice, you ask? Simple! When water hits a Water Based Dressing – it tends to fall down, fall apart, poof – gone. Water Based Dressings generally don't stand up to the elements as well as Solvent Based Dressings do.

Solvent Based Dressings tend to repel water, much like water beading from a waxed finish on your car. In my opinion, Solvent Based Dressings also give a more rich, luster-like finish and do an excellent job of bringing back the fading of vinyl and rubber typically seen on the outside of your vehicle. The bottom line is that Solvent Based Dressings are longer lasting and more durable when constantly exposed to the elements.

A little more detail about Water Based Dressings

Most of the dressings available at retail stores come in a ready to use formula. The downside of this is, if you don't like the particular finish of these products, you are stuck with it. For example, you might want a more of a matte finish instead of an out-of-bottle glossy finish a product might provide. You figure, since it's water based, you should dull it down with water, right? Not so. Most of these dressings aren't designed to be mixed with water, and now you have worthless bottle. As well, we have all had the experience when these dressings really never dry to the touch and become a big dust magnet. Well, you figure, so much for dressing and protecting your interior, right? Not so! Water Based Dressings that the professionals use actually dry to the touch AND are designed to be mixed with water to give you the exact finish you desire. But the best part is they don't usually cost any more than their retail counterparts!

A little more about Solvent Based Dressings

Solvent Based Dressings tend to do a better job at restoring faded trim and plastic, offer excellent UV protection and are easy to apply. To get the finish you want, instead of diluting these products like Water Based Dressings, simply wipe the dressing on with an applicator to get your desired finish. More equals a higher gloss, less a lower gloss. For those who want a high-gloss finish on their tires, simply spray the dressing on and let it dry. For those who prefer a lower gloss, wipe the dressing while wet to get their desired finish. In addition to tires, a good Solvent Based Dressing can also be used to dress and protect all of the rubber, plastic and vinyl trim on the outside of your ride.

Lastly, one more Specialty Dressing – a cleaner and conditioner in one

There is one more category of dressings that should be mentioned here – a cleaner and conditioner combined. For example, one of the most delicate interior surfaces of your ride is leather. The key to keeping leather nice is delicate cleaning and proper conditioning to keep it supple and protected. Check this out for simple - wipe the product on and then wipe it off. In most cases, these specialty products are also scented like leather.

Summary

Don't let all the choices and hype about dressings confuse you. Use Solvent Based dressings for the outside, Water Based Dressings for treating and protecting the inside and consider Specialty Dressings for cleaning and conditioning delicate surfaces such as leather.

Scott Ellis is from Jax Wax Distribution Systems and is responsible for distributing Jax Wax Car Care Products retail worldwide. Jax Wax Car Care Products are widely used in commercial businesses such as detail shops, body shops, and auto dealers. Jax Wax is now packaging its products in smaller quantities for the consumer market. You can get fast, commercial quality results by doing the detail work yourself. For more information, go to www.jaxwax.com or call 877-7JAXWAX.

Building A Competitive HU TSO car; A Racers Perspective

By Michael Lyons

I wanted to write an update on my car after my first season and never got around to it until now so this turned into a mini history of what I've been up to in trying to build a competitive car to race HU. I would like to note I'm not a professional car builder and don't do this for a living although it seems like it at times. Some of my experiences and opinions maybe right or wrong but it is what I've learned to this point and I'm definitely not always right. I sometimes refer to this project and "I" but it is really "we" meaning my good friends Ray Mills and Jason Miller who have spent hours helping with the car and going to all the races with me. Last but not least there is Lonnie Diers who has put a lot of his time and effort into this project as well and is an integral part of this project and has given me quite the lesson on Gen 7 tuning.

The 2004 season a season of Trials

I first bought the car in late 03 and brought it home early 04. Some of you may remember the initial buildup as it was printed here in the spring 04 issue. As usual when buying someone else's semi finished project you find yourself re-doing or rebuilding everything anyway which is exactly what I did for most of the first year. After getting the car home the first stop was the chassis shop were I had the roll bar updated to a full cage and certified. In addition we added front and rear QA1 coil overs for ease of adjusting ride height along with a set of lightweight UB Machine front UCA's and Wilwood front brakes I had from a previous project. I also reinforced the rear LCA mounting points and added a HRpartsNstuff rear sway bar to go along with Paul's rear UCA and LCAs.

I got the car back shortly before the 04 GSCA NATS in BG in May and as usual it was a last minute thrash to make it there. We made the race but were far from being competitive with a lot to still be learned and sorted out. We were 1 of 3 cars that showed that year and ended up being disqualified for an open wastgate. I had planned to run Q16 as a result but ended up having to leave early Saturday morning due to severe storms at home causing my basement to flood, which continues my unfortunate luck with this race.

After returning from BG it was again a rush to sort out the combo before the first annual BPG race in August. The S2 motor I got with the car had some good pieces in it but was down on power due to a questionable rebuild and poor ring seal. I wasn't excited about the rocker arm geometry of the M&A heads with the stud mounted offset cheapie SBC hardware and wanted to replace them. I decided to step up to a new set of Champion R-heads with shaft mounted T&D rockers and found a new set of the "latest" castings on the net for a reasonable price from a guy who was abandoning his project. I bought them and pulled the motor for a complete rebuild. I got the motor back together with fresh pistons and the new heads the week before the BPG race and its first outing was the first day of the event on Thursday.

With any new car it was a battle of the 60' and that had to be sorted out first. I spent the first few days I did just that. My car was having a terrible time hooking and I had some pretty good suspension underneath. After spending all of my time focusing on the rear suspension I turned my attention to the front suspension and my shock adjustment. After tightening the front shocks 4 "clicks" on a 12 setting QA1 my 60' instantly dropped from mid 1.50's to mid 1.3's. I continued to play with the settings and found that to be the best and also found how sensitive this combo can be to front shock adjustments since one click in either direction will have a negative affect on my 60' times.

The first thing I noticed with how the car ran was the significant increase in power the new motor was making over the old. After making a few shakedown runs and getting the 60' sorted out I was finally able to make a full pass on the car and see what it was capable of. On the last pass of the day on Friday I had a real eye opener at the 1000' mark the car started to get loose and was going to the center at 145mph! I lifted and thankfully the car straightened out. On the return road noticed my coolant temp gauge pegged and thought that can't be good. When I returned I found the freeze plug missing on the front of the passenger side head. I loaded the car up and went home to find the problem.

The first thing I figured was a blown HG and pressurized the cooling system but both the leak down and compression test showed no signs of a HG. The plugs also looked good along with the datalogs. I replaced the plug and figured it was a bad soft plug and a fluke. I returned Saturday for Sat night qualifying after the car show. My first pass I got out the 1/8 mile mark and my windshield was covered with water and the car got loose again. I thought no way not again, this time the freeze plug on the back of the drivers head blew out not as easy to fix and the motor would need to come out to reach it. I immediately loaded the car and went home to thrash all night.

We pulled the motor replaced the plug and pinned all four of the soft plugs in the heads and checked the HG's put the motor back together and back in the car all in 12 hours. I was pulling into the track Sunday morning and as I'm driving by the staging lanes as the TSO class is pulling up for the last qualifying run for which I haven't qualified yet! We unloaded and made it as the last car was just pulling up to the burnout box. I got up to the line and made a pass. It was a nice clean pass with a good 60' resulting in a 9.36 at 146mph which ended up being good enough for low qualifier and was my best pass on the car so far. I was happy to just make the race at this point and really stoked that I at least had a competitive car. I made the finals due to a mechanical failure and a bye run. To this point I didn't have to run the car hard since the qualifying run I made earlier. I got up to the line and heard a whistling noise and couldn't spool the car at all, aarrgghh! As a result I had a really poor 60' and needless to say lost the race. When I got back I found the EGT probe was only hand tight and blew out on the pass prior to the final round creating a serious exhaust leak right before the turbo. I took RU and set LQ which wasn't bad after having the heads off and motor out of the car the night before so I was pretty happy.

Norwalk was in early September that year due to being rained out earlier in the year. I made the race without any real changes to the car since BPG. I looked everything over really good and again didn't find anything wrong so I again figured the flying freeze plugs were a fluke and maybe a bad batch. I made one pass at Norwalk for Q16 qualifying and was leaking coolant really bad from the head. Further investigation revealed many of the usual cracks in the heads. Once I got the motor out and apart it was obvious the heads were significantly cracked on the outside along the lower bolt holes and into the spark plug area. After speaking with Tom at Champion I had come to find out the heads I had were actually first generation castings that have been known to have cracking problems. I was able to replace the castings with a new and get my car back out on the track.

I was able to get the car back together before the end of the season and finally started to get things worked out. I made several 9.0 passes in the 155-156 mph range and the car was really starting to come around. My last pass of the season was a 9.01 at 156, SO CLOSE. I was at 30 psi of boost and the car was running out of steam at the end of the track. I was only seeing 6% converter slip with 7200rpm in the traps. I was still conservative on fuel and timing and could've put more in to see that 8 second pass but figured it wasn't worth beating on it to just run a number.

Over the winter of 04/05 I planned to switch out my BtoB FAST for a sequential unit and go from a 3.70 gear and 28.5" tire to a 3.50 gear and 29.5" tire. After speaking with Lonnie Diers he had convinced me to switch to an Accel Gen 7. I also wanted to replace my Terry Houston headers as I had problems with them cracking. I switched to a set of ATR headers and at the same time I decided to upgrade my turbo from a 3 bolt housing to a four bolt housing. We also fabbed a new 4" downpipe and tied the wastegate dump into the downpipe so I could race at BG.

I was still down on power and needed to figure out why. Earlier I went to a Buick Dyno day at a new shop to make a few pulls. On a chassis dyno my car didn't run like it did on the track and I had to re-work the VE table to get the car to even run right. After screwing around we ended up making 836 rwhp but surprisingly enough we were making it down low at 5800 rpm and power was falling off after 6300. Considering I was shifting at 6800 and going through the traps at 7200 it didn't make sense at the time so I didn't place much value on the info at the time. I had decided to put my engine on an engine dyno to find out why it was nosing over on the big end and exactly what it was doing. We found a local shop with a dyno and a hell of a nice guy who ran it. We ended up having the engine on the dyno for 2 weeks and were able to test several different variables.

We learned a lot on the engine dyno and it was a great experience all together. Lonnie came up to help with the Gen 7 install and tuning and did a fantastic job with getting the Gen 7 set up and running. Getting a turbo V6 on an engine dyno is not an easy affair. We ran into several road blocks the first of which was finding a neutral balance flywheel for a Buick. It turned out that the SBC flywheel would fit with some minor fabricating but the next thing we discovered was the starter would need some fabricating as well since the flywheel we were using was a different diameter than the stock Buick flexplate. Once we got that sorted out we then found an ignition miss we couldn't figure out which ended up being a bad coil pack that was "new". We swapped everything and put on a 16 volt battery which took care of that. Next up the Weldon 2015 fuel pump that was on the dyno was coming up short at around 700hp. We had to take the fuel pump off the car to feed the thing. These were just the major things there were several and I mean several small things to sort out to make it all work before we could make a clean pull. Our first clean pull we made 1084hp and 1067tq. One of the neat things about an engine dyno is we were able to load the motor at 4000 rpm to build boost then pull it through 6500 rpm to see the characteristics of the cam, which is what we were looking to do. The engine dyno confirmed what we were seeing on the track and what we saw on the chassis dyno and the motor was making big power but not were we were able to use it. Peak power was occurring in the 5600-5800 range and starting to fall off after 6200. The car rarely saw less than 6200 rpm on the track after first gear. What we did learn is that the cam will dictate were the engine is most efficient and no matter how much boost you run it doesn't change were peak power is made. Increasing boost DOES however increase power and will increase the power under the curve which does effect how the TQ converter works and will affect how much useable power you have to use.

So in looking at the data from the dyno we found several things that needed addressed. First, to run 156mph at 3450# we probably never made more than 850 peak crankshaft HP going down the track but we probably never made less than 800 hp either. If you look at the power the motor made from 5300 to 6000 rpm versus what it made from 6000 to 7000 rpm it was obvious that if we could either move the curve up or down we were going to have more usable HP on the track. So naturally we decided to try a bigger cam. The motor had a 232/232 Duttwieller grind in it and Lonnie happened to have a 244/244 cam with the same LSA and lobe lift as our 232/232 so we decided to swap it and see if it moved the power curve and how it would affect the motor. The larger cam did move the power curve up and we made more useable HP in the power range we operated the motor but it also killed the TQ. We had several other tests to run but at this point it was early April and we were out of time on the dyno. In looking at what we had at the time we decided to put the smaller cam back in since the current TQ converter we had worked fantastic and we were able to easily spool the turbo and race the car on a pro-tree. With the larger cam and loss of TQ and lack of time prior to BG we just decided not to risk having a difficult to race car.

We did however go from a 3.70 gear and 28.5" tire to a 3.50 gear and 3.50 rearend gear. We figured we would lower the trap rpm by 400 rpm and this should get us closer to were we needed to be. Boy, did this open a can of worms for the 2005 season.

The 2005 season a season of tribulation

After flogging the motor on the dyno for 2 weeks in March it was a serious full on effort to get the car ready for BG and as usual I made it just in time to fire the car and drive to the race. After the dyno I had the shop we were at pulled the heads down to check the valve springs which were a little light on seat pressure but nothing that would significantly affect performance. I freshened the heads and put on a better spring and had the shop degree the cam back in and put everything back together. In the meantime I was switching the car over to an Accell Gen 7 from a FAST BtoB and needed to re-pin the engine harness. The harness we used on the dyno was a stand alone DFI harness and not really meant for a Buick. I figured it would be an easy weekend job to pull a few wires and crimp a few wires boy was I wrong. That ended up in major re-wiring job that I would've probable been better off buying a custom harness from John Spina at Caspers, especially after all I spent with him on connectors and splices. The good is I know and understand how my car is wired.

After all if this I should've known BG was going to be a disaster and it was. Once I got there the first thing I needed to do was swap out the street tires and put the new larger slicks on which required some extra frame notching in the pits. Then we had a few minor electrical gremlins to work out followed up by a bad starter and last but not least on a qualifying run my car hipcups at the 1000' mark and I look at the gauges and NO OIL PRESSURE! I killed the motor and towed it back to the trailer. After looking it over we discovered something happened to the cam gear and I lost the cam sensor and oil pump.

This was Friday and as far as I was concerned it was a wrap. I didn't sleep that night thinking of all the mini disasters followed up by the big one that ended my weekend and all of the work we put in to make the race. I was up early the next morning decided to pull the front cover to see what broke. The shop that installed and degreed my cam didn't tighten the cam bolt enough and it had apparently backed out but nothing appeared to be broken. I figured it was worth putting it back together just so I could drive the car on to the trailer. Well, I had it all back together and running and everything seemed fine. I had good oil pressure the filter was clean and it didn't appear to have hurt anything so I went and made the last qualifying pass and qualified with a 9.47. I was at least in the race at this point. I won the first round with the car breaking up due to being to rich. We made some adjustments and I returned for second round tuning while trying to race. Went to stage the car and the Trans brake stuck and the car pushed forward giving me the red light. Oh well my BG curse continues.

After I returned home from BG I took the car out for a cruise night. While idling in a parking lot I hear a loud clack clack coming from the motor. I have the car towed home and found a broken lifter that spun in the bore. When we got it apart we found that the cam walked forward and smacked the lifter cracking the foot on one and damaging the others. I was very lucky this happened in a parking lot and not on the track as the only damage was the cam and lifters. The metal in the motor required a complete freshen.

After having the motor out to be freshened the car was down until you guessed it Thursday August 12 the day BPG started. The night before I had the motor back in the car ready to fire all I had to do was fire the motor check the fluids and load it up and spend the day sorting it out at the track. Not so easy. I had a crank sensor go semi bad on me which was a complete nightmare. I had cranking fuel and spark but the car wouldn't run. It would even light a noid light and showed cranking RPM on the DFI. For some unknown reason the sensor only showed half of the crack pulses to the DFI. I finally figured that out and was able to qualify Friday night with I believe a 9.20 or so. It was a struggle to this point I had no real aspirations of the race going well but the car didn't let me down this time. I ran Rich Rezes in the first round who was also having difficulty. All I had to do was get the car out of the gate and it should've been and easy race. I staged a little to deep and was a little to fast on the tree red lighting with a .390 on a.400 pro-tree. Rich went on the win the race that year.

After returning from BPG we started to analyze some of the data from the runs we made. While changing from a 28.5 tire and 3.70 gear to a 29.5 tire and a 3.50 gear we expected to lower our trap rpm some which didn't seem to be the case. With the tire and gear change we saw our torque converter efficiency go from 6-7% to 18%. The increased load and lower rpm made it more difficult for the converter to couple and was killing power all together. We needed a new plan so we decided to look at variable stall control (VSC) transmissions and I bought a Freddy Brown unit that was previously in Terry Houston's car. We installed this with a tighter ATI 10" full blown converter in hopes of tightening up the converter and using the VSC to "slip" the converter in

order to spool the turbo. It worked like a charm. The first go around the converter was to tight and I had to have it loosed to a 3200 stall in order to get it to work. This was significantly tighter than the 4500 stall converter I previously had in the car. With the DFI we were able to set the turn on and turn off points with the NOS tables. We were turning the VSC on at 1500 rpm and shutting off at 7 psi of boost and the car would spool and launch instantly. We were also again seeing 7% slip on the big end out of the TQ converter.

While the converter was out to be loosened I had decided to run through my rear suspension. I was using polly bushings in the rear and wanted to check everything before my next outing. I found the UCA bushing were trashed in the rearend housing and the UCA. I decided at that point to go with the Wolfe adjustable upper and lower control arms but still kept the HR rear sway bar. Since the 29.5 tire didn't fit all that well we went back to the 28.5 tire and readjusted the ride height and put a shorter front tire on to lower the car some in order to keep the air out from underneath. We also scaled the car, squared the rear suspension and plotted it. After all of this when I got the car back out I had nothing but headache with traction. My 60' went to mid 1.50's and the car was all over the place. After racking my brains to figure it out, I again went to the front suspension and sure enough I had tightened the front shocks at BG with the larger rear tires to try and settle the nose down. As soon as I did this the car dropped back into the low 1.30's and a few passes later I was able to run my best time to date of 8.74 at 157.

It was close to the end of the season and I was getting ready to wrap up and needed to make my NHRA license runs so decided to head down to Edgewater raceway with Lonnie to finish things up. The car was running VERY well at this point and it had seemed we had the tune worked out pretty well. I was making license runs so I had the car turned down to only 20 psi and we were running 9.20's which was exciting and the track was really hooking well so after my license runs I wanted to better my 8.74 run I did earlier that year. I turned the wick up some to 28psi and went to stage the car. Car left hard, really hard and I was looking at nothing but sky, this is going to be a good run! Reach to pull second gear and I get all kind of nasty sounds and no second gear. I rolled the sprag in the transmission but I had my best 60' at a 1.29 which Lonnie said I did with the back tires. I felt the season ended well especially after all of the difficulties we had the car was hooking, the motor was starting to make good power, we finally got it in the 8's and the whole package was very competitive, 2006 looked good.

The 2006 season Things are starting to come around

BG wouldn't be BG if I'm not thrashing on the car last minute to get ready for the race and this year was no exception. When we pulled the motor and trans at the end of 05 we found the heads were again cracked. I knew I had a small issue with the driver's side head leaking earlier in the year I was able to seal it with block seal and never had another issue with it for the rest of the season. While this set of heads held up considerably better than the first set it was obvious these heads were never designed for 1000+ HP engine and after speaking with Tom at Champion he agreed. Tom ended up sending me a new set of casting in which the exhaust port was raised and extra material was put in the problem areas in order to solve the cracking issue. I was thankful Tom was so willing to help and I can't say enough about the level of customer service I received from Champion. Since this head was a completely new design I didn't receive them until late April which meant it was a last minute thrash to make BG and as usual nothing really fit well with the new heads. We had some minor fab work to the headers to get them on but we didn't get them sealed real well but hey we were off to the races.

We left for the race Tues night and arrived wed morning. We had a ton of little things to finish on the car since I just got it running the day before we left. I needed to install a new datalogger and a few other things but figured we had two days to work on the car and sort out all the small stuff. Other than the heads we didn't change much so I felt we were going to be very competitive this year. As fate would have it my wife and I were trying to adopt a child and before I left for BG I had to send out our info for a possible adoption. It happened that the birth mother selected us for an interview and I got the call Wed afternoon at the track so I literally had to load the car back up and head back home for the interview. We were excited and the interview went well but the birth mother picked another couple. The story has a good ending though as we did end up adopting our daughter Abigail. She was born July 17th and we brought her home on the 19th and she has been nothing but a joy ever since.

When I returned home Norwalk was only a few weeks away and I decided to get all of the little things finished and at the same time swap the ignition over to a distributor. This ended up in a complete re-wire of the dash to mount the new ignition box and datalogger. I had the dashboard on the garage floor the day before the race at Norwalk. I ended up getting the car back together but had to many little issues to sort out and didn't have a good outing at Norwalk but I at least made it to support the TSO race.

I ended up sorting everything out in time for the Buick Horsepower Nats at Indy. The car was deadly consistent and we set low qualifier again with a 8.92@153. We were making good power but couldn't get the boost over 27psi. We got to the finals again but ended up breaking the forward drum in the trans. Cal Dave Fiscus were matched up in the semis and I had a bye run for LQ so we decided to run them at the end and that way I wouldn't have to make a broken pass. So I ended up taking runner up and technically losing to Dave Fiscus due to breakage.

After Indy I had Lonnie Diers build a bulletproof TH400. Lonnie did some research and developed a new TH400 package that should hold up to 2000HP. In addition he also developed a new variable stall controller (VSC) that worked better than the previous one I was using. I learned a lot about transmissions at this point. The TH400 is a very durable piece and for up 1000HP is a pretty reliable using mostly factory hard parts. After that point it starts to get dicey with direct drum sprag input shaft failures becoming common. To cure this Lonnie worked with Griner to develop a VSC valvebody that would support the Griner spragless second gear setup. Lonnie also modified and developed a new aluminum direct drum for the spragless setup. We also decided to go to a 2.10 six pinion low gear set to replace the weaker factory 2.48 four pinion gear set. The lower 1st gear ratio should also help settle the car down on the starting line hopefully allowing us to leave harder and improving our 60' times.

We got the trans back in for the 3rd annual BPG race and were excited to be there as we expected to have our best outing yet as we now had a bulletproof trans, the motor was making great power and the car was hooking up pretty well. Well, at least we thought it was as Quaker City Dragway can certainly test that theory. We were still stuck at 27 psi but could run mid 150's with that so we felt it would be competitive. We had problems all weekend with the car bogging and pulling the boost down as soon as we left the starting line. With this new problem the best we could do was a 9.00 which qualified us 2nd to Dave Fiscus's 8.78. The car was very consistent and I actually had a lot of fun racing it and put at least ten 9.0 passes on it that weekend.

In the semi's I was paired up against Avon's hard running Turbo T. This was not going to be an easy win and I knew I had to be on my game to beat him but I didn't think it was going to be this exciting. On the tree I cut a .420 to his .440 light and beat him by only a fender at the finish line with both cars running bottom 9's. I was in the finals again with Dave Fiscus's whose car was running really good. The only advantage I felt I had at this point was the fact that Dave was running on drag radials and I had slicks. With QCR being my home track and with it typically being a greasy one I was hoping for a 60' advantage. I came up and pre-staged and then bumped in to stage and set the t-brake. The motor started to come up on boost then POW is was like I blew an IC hose off. @(&!%#!!! To add further injury Dave had a bad light and spun having to pedal to a 9.0 pass. I could've beat him. Here I came to find out the sprag in the torque converter failed. I also cracked the aluminum stator which I was surprised to find in this converter since it was one of ATI's full blown TQ converters. I was runner up again, and another lost race due to a parts failure.

The 2006 season was a better one and we got the car to become pretty consistent. For the new year I had some oil problems I needed to address and wanted to freshen the motor over the winter and have everything ready for the following spring. I had the TQ upgraded by Bradco with a mechanical diode and steel stator which can take significantly more power then we can throw at it. 2007 should be exciting and I really feel we have the bugs finally worked out of our race program. We certainly broke enough driveline parts last year to find the weak areas.

Over the winter we got the car back together and put it back on the chassis dyno to see if the distributor and new DLS cam were making more power. 2007 is going to be the first year I bring the car out without any changes to the combo. We did update the headgaskets to the new SCE Titans and I really like them. They are a full copper gasket that didn't need any o-ring or machine work to install. They also have a print-o-seal on them around all the water ports and sealed right up without any issues.

On the chassis dyno we could not get full boost until 6400 rpm and we are certain the cam is making peak power somewhere in the 5700-6200 rpm range. The distributor seemed to pick up power upper RPM power significantly and is worth what a lot of guys are claiming 50-75 horsepower. Above 6500 I would say it may even be a little more than that. IMO though if you don't run your motor over 6300 rpm I wouldn't make the change and I don't believe it is worth anything below 6300 over the factory DIS system. My car almost never sees less than 6300 going down the track so it was a good choice for my combo. I know everyone reading this is dying to know what it made but I can't spill all the beans especially when I have a 4 race point series to run in 2007! We did some testing and we have some interesting findings but I will leave that as a teaser for the next time.

Dues Are Due

By Rick Martinez

Just an important reminder for all you annual paid members, it's the new year and time to re-new yours dues. This is a friendly reminder as there will be one more issue under for the 2006 year, which should be out shortly after this issue.

I am well aware that the Build Sheet has been late going out. I am not here to say anyone is at fault; I just want to let everyone know the reason for this. On doing the newsletters we set our goals on having each issue containing at least 20 pages, so it is very frustrating when we do not have enough information to fill an issue. So please keep in mind getting the information at times can be difficult, so this in turn delays getting it out to you all. Lastly if you are doing a project, got some tips, send them to us. You vendors out there, I always said in the past that if you have any helpful tips, new products, testing results, send them out to me. It's free advertising and the membership will appreciate the great information sent!

Most importantly, of all of those members that have sent us articles, tips, photos, suggestions, etc. we want to thank you all! You ladies and guys really are a tremendous help not only to us but also to the entire BPG membership and Buick community!

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2007 BPG Buick Horsepower Nationals
Hotel Information

The Board of Directors are pleased to provide the following information about hotels in the Heath/Newark area for the 2007 BPG Buick Horsepower Nationals. There are a wide variety of hotels from which to choose. All are within 10-15 minutes of National Trail Raceway.

Hampton Inn - HOST MOTEL
1008 Hebron Road
Heath, OH 43056
740-788-8991
800-HAMPTON
800-426-7866
Use 'BUI' for ordering. Rate is $75 + taxes.
http://hamptoninn.hilton.com/en/hp/h...tyhocn=NEHHHHX

This is the newest motel in the area. Situated in the center of the "strip" within walking distance of restaurants and shopping center. Additional trailer parking will be provided in the Kroger parking lot next to the motel. Security will be provided by the Hampton Inn for the vehicles parked in the Kroger and motel lot. NO PETS.

Quality Inn
733 Hebron Road
Heath, OH 43056
740-522-1165
1-877-424-6423
Rate is $65 + taxes.
http://www.choicehotels.com/ires/en-...ult=1&nchild=0

This is an older "ex-Holiday Inn" with over 100 rooms. It has a courtyard layout with outdoor pool, restaurant and bar. A very short walk to the Cruise In. Sort of reminds you of a Holidome without the dome. Plenty of trailer parking on site. No additional security. Pet friendly.

Holiday Inn Express
773 Hebron Road
Heath, OH 43056
740-522-0770
877-270-6397
No Rate Offered

This motel did not offer us a good group rate. Their advertised rates for August were over $100 but were willing to give us an $89 rate provided we guarantee purchase of 20 rooms. We did not put up the guarantee. The motel is adjacent to the Quality Inn. A short distance from the Cruise In. NO PETS.
http://www.ichotelsgroup.com/h/d/ex/...lsearchresults

Econo Lodge
1266 Hebron Road
Heath, OH 43056
740-522-6112
No Rates.
http://www.choicehotels.com/ires/en-...ult=1&nchild=0

A small Econo Lodge with standard services. Limited trailer parking with no additional security. About ½ mile from the restaurants, shopping, and Cruise In. Pet friendly.

Super 8
1177 South Hebron Road
Heath, OH 43056
740-788-9144
1800-800-8000
No Rates.
http://www.super8.com/Super8/control...Avail&rate=000

Located about 1 mile from the center of Heath. We did not pursue getting a rate from the motel. Pet friendly

Best We stern – Lakewood Inn
122 Arrowhead Blvd.
Hebron, OH 43025
(740) 928-1800
No Rates.
http://local.yahoo.com/details;_ylt=...cb=KcrUesezDK7

This is a 70 room motel located immediately off the I70 exit 129. New in 1999, they are in the process of switching from the Amerihost chain to the Best Western. Rates were not available. This motel is 7 miles from the Heath area.

Red Roof Inn
I-70 at Lancaster Road/SR 37, Exit #126
10668 Lancaster Road Southwest, Hebron, OH 43025
Phone: (740) 467-7663
No Rates.
http://www.redroof.com/reservations/...px?searchtype=

This motel is located at I-70 exit #126, the same exit as National Trail Raceway. The track is 2 miles from the motel and 10 miles from Heath. This is a truck stop motel located directly across from a TA truck stop. Exit #126 consists of truck stops and gas stations.

There are many other places to stay in the area. The following link will highlight those in the Newark/Heath area. We considered "The Place Off the Square" in Newark. It is in an attractive "town square" setting 3 miles from Heath owned by the Longaberger basket company. However, it is the only Hotel/Motel in the area. This is something to consider for 2008.
http://keyword.netscape.com/ns/boomf...io_lodging.htm

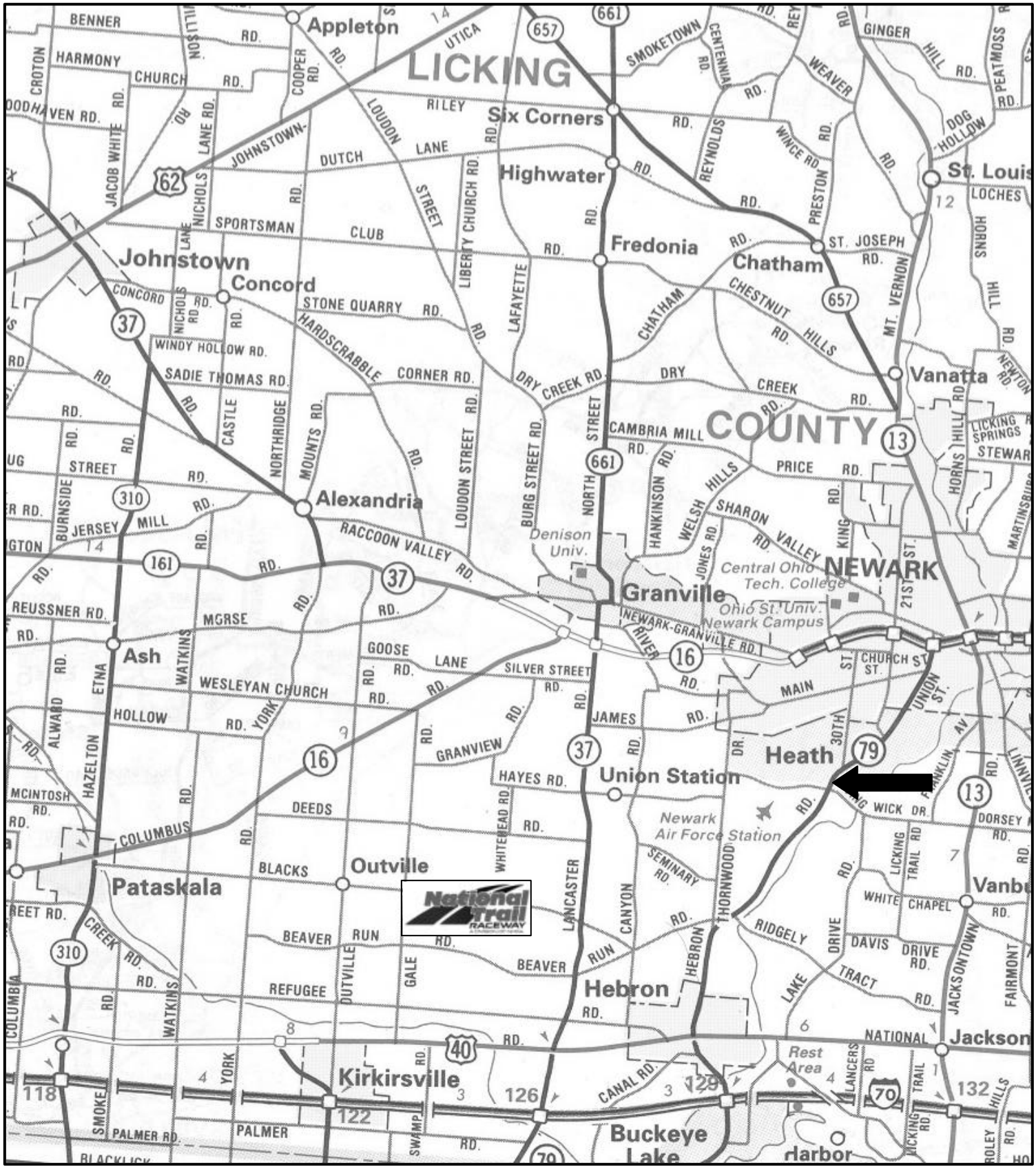
It is the intent of the BPG to give those attending as much information about the area as becomes available. The BPG is working with the Licking County Convention and Visitors Bureau to make your trip to National Trail Raceway as pleasant as possible. We have chosen Heath because of its convenience, location to the track, and services available.

National Trail Raceway is about 20 miles east of Columbus on old U.S. Highway 40, one mile north of Interstate 70 at the Kirkersville exit. From Columbus, take I-70 to Highway 158 north and follow the signs, or take I-70 to Highway 37 north to U.S. Highway 40 and follow the signs.

Regarding the distance to all of the hotels, which are fairly grouped close together. If you Map Quest the distance from the Host Hotel to National Trail Raceway, located at 2650 National Road SW, Hebron, Ohio you will find it just over 8 miles. We hope that the map on the proceeding page will also be helpful.

Detailed map, vicinity of National Trail Raceway, Hebron, Ohio
Host Hotel, Hampton Inn, Heath, Ohio

Map Quest distance between the two is 8.42 miles



2007 BPG Buick HorsePower Nationals

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