



WELCOME!

With just a month left to go, your cars are taking shape, and your organizers at Baja SAE Auburn 2015 (BSA15) are just about ready to give you a great Competition. We're using a seasoned site (Competitions were held here in 2006, 2009, and 2012) with courses and facilities that have evolved over the years. We wish you good luck in the time remaining, safe travels on your way to Alabama, and a fine performance on our challenging courses.

THE SITE

Our Competition site is the test facility for the National Center for Asphalt Technology (NCAT) - a working engineering test site. We are extraordinarily fortunate that NCAT's governing consortium allows us to hold a Baja Competition in what is, essentially, their laboratory. They do this because of their interest in engineering education and their faith in the Baja program. We hope that you will return their favor with your professional behavior and concern for our host's best interests. Also, since it is a functioning test facility (i.e. not a public venue), be alert and aware of your surroundings. Footing is mostly loose, rocky, and unsettled. Obstacles and equipment, apparent and not, are lying about. The woods are dense and full of sticker vines, critters, and Marc Holes (about a foot in diameter, infinitely deep, covered with brush). So take care for your personal safety, and for the safety of those around you.

OPENING

The site opens at 8am on Thursday, 9 April. **DO NOT ARRIVE BEFORE 8AM.** It is not safe to park along Lee Road 151 to wait for opening. Therefore, local law enforcement has been alerted to ticket any vehicle found so parked, and order it to move. Arrivals at the gate before 8 am will be allowed to enter the site so that they can get off the street, but will be assessed a penalty.

ENTRANCE

All teams will enter the site through the South Gate (32° 35' 40.2"N, 85° 17' 38.4"W). Rigs (trucks, trailers – one rig per team) will then queue along NCAT's asphalt test track while they wait to be assigned to a paddock.

PARKING

Team members, additional team vehicles, volunteers, spectators, visitors, and friends may park in Spectator Parking, entering through the South Gate (32° 35' 40.2" N, 85° 17' 38.4"W), and then turning north into Spectator Parking.

PADDOCKS

There are three paddock spaces: the Upper Paddock, the Lower Paddock, and the Lower Paddock Extension. The paddock locations will appear on a site map posted to the Competition website. Alternately, Google Earth “1600 Lee Road 151, Opelika, AL”. The Upper Paddock is the dark asphalt rectangle to the NW of the pin. The Lower Paddock is the paved rectangle 600 feet S of the Upper Paddock. The Lower Paddock Extension is the dirt field 300 feet S of the Lower Paddock.

Paddock space is very tight side-to-side, but there will be plenty of room at the ends of the trailers. Only hitched haulers (or box trucks) are allowed in the paddocks. If the hauler unhitches and leaves, it may not return to the paddocks until after the Endurance Race. Unhitched haulers must join the road cars in Spectator Parking.

Paddocks will be numbered in order to assist in rapid recovery of damaged Baja cars. A label will be made available to place on the driver’s side Front Bracing Member of the Baja car.

PADDOCK RESIDENCE

We strongly encourage you to leave your trailer (or box truck) in place throughout the Competition. You will be allowed to stay all night (there will be security). If you really must pull your trailer out, see the Paddock Boss first. The Paddock Boss will direct and coordinate your movements. Paddocks will have limited area lighting, but will not have any pluggable electrical power.

REGISTRATION

As soon as you arrive, after parking your rig, but before you open the ramp or door, go and register. We hope that you have made full use of SAE’s excellent online registration system so that you don’t have to wait in infinitely long registration lines and can just drop off your forms, pick up your wristbands, and get back to Baja. But either way, no opening or unloading or working or anything until everyone gets a wristband.

Everyone on site is required to sign a separate Auburn waiver in addition to the SAE waiver. This waiver will be posted to the Competition website. It can be read and signed in advance. Organized teams will gather signed waivers from every team member and present these, alphabetized, at Registration.

IMPORTANT

Individuals under 19 must have the waiver signed by a parent. Please download the waiver early and have it properly signed so that you can bring it to Competition.

PRESENTATION

All BSA15 activities will be held at the NCAT site with the exception of the Presentation Event, which will be held on the Auburn University campus in Wiggins Hall (354 War Eagle Way, Auburn, AL 36849). This is about a 30 minute drive from the NCAT site (please allow one hour to account for traffic, misdirection, parking, check-in, and the inevitables). There is no shuttle service from NCAT to Presentation – you are on your

own - although we will provide parking near Wiggins. Parking instructions and maps will be forthcoming. Teams with early Presentation times (a schedule will be published) might want to send their Presentation crew to Wiggins before coming to NCAT – just be sure to give them wristbands when they finally arrive back at NCAT. Wristbands are not required for Presentation. At Wiggins, check in at the Presentation desk in the first floor (north side) lobby. You will be sent to your Presentation room from there. Each Presentation room has a screen, is darkenable, and has AC power (110 V, 60 Hz, US style plug). Teams must provide their own computers. There are projectors in each room, but these cannot be assured to work with your computer. Each team is responsible for the success of their projection. Successful teams will bring their own projector.

FUEL

The fuel storage policy of BSA15 is that all fuel containers, other than those integral to a vehicle or powered device, will be stored in the Fueling Area at all times. This means that fuel for your Baja car, spare Baja fuel tanks with fuel in them, fuel for your generator, fuel for your hauler, fuel for your Diesel party bus, and any other external fuel tank, gas can, or any such like, will be stored in the Fueling Area at all times during the Competition. Fuel cans found being kept anywhere besides the Fueling Area will be confiscated and returned after the end of the Competition. Teams will not be allowed access to confiscated fuel tanks.

The Fueling Area is marked on the Competition Site Map and is near the Acceleration Event site. Mark your fuel tanks with your car number and bring them to the Fueling Area immediately after registering. Fuel tanks will be stored under a metal shed roof in the Fueling Area except during the Endurance Race, when they will be moved nearby and arranged for easy access by cars exiting the Endurance course.

Baja cars may not be fueled anywhere other than the Fueling Area, at any time during the Competition.

Generators and Diesel party busses may be fueled in situ (i.e., in the paddocks), but the fuel tanks must be stored in the Fueling Area, taken to the paddock for refueling, and immediately returned to the Fueling Area. All refueling must be attended by a fire extinguisher and operator.

In benefit for having conformed to this draconianism, you may grill in your paddock, as long as you have a fire extinguisher at hand, and as long as you don't do anything to upset the Paddock Boss.

There is one additional Fueling Area – the West Hill Fuel Dump, which will be open only on Saturday, 11 April, while short dynamic events are open. Fuel tanks may be taken directly from the Fueling Area to the West Hill Fuel Dump and kept there, and may be taken directly from the West Hill Fuel Dump to the Fueling Area. Baja cars may be fueled in the West Hill Fuel Dump while following the same rules as apply in the Fueling Area. Fuel tanks remaining in the West Hill Fuel Dump at the closing of the short dynamic events will be confiscated.

FOOD

Food will be available for purchase on Friday; Honda will provide lunch on Saturday, and Auburn's Samuel Ginn College of Engineering will provide lunch for the awards picnic on Sunday.

We expect to have food-for-purchase available throughout, including both meal-type food and goodies (Marble Slab has confirmed).

Teams are advised that the NCAT site is somewhat remote (of course – it's an engineering test site). There is no food or fuel available for purchase in the immediate area, and very little within a medium distance. The most reliable source of supply is the Tiger Town shopping center, 9 miles away off I-85 at exit 58 (go west). The Kroger is in the far NW corner of Tiger Town. Lowe's and Home Depot are nearby.

RADIOS

Please note the radio frequency policy posted on the Competition website. NCAT has a wireless network, our IT folks are trying some fun stuff (you'll see!), and we'd hate for there to be any interference. PA will broadcast at both audible frequencies (i.e., loud speakers) and at FM frequencies (i.e., FM-PA, so bring a radio).

CLOTHING

There will be Baja SAE Auburn 2015 specialty teeshirts for sale (this is different from the complimentary teeshirt, which is generously provided to all by DS SolidWorks), plus hats and polos and a specialty key tag. Click the Baja Store link on www.bajasaeauburn.com. If you order online by 20 March, we will deliver your items to you at the Competition. After 20 March, we will continue taking orders until 24 April, when we will shut down, make a final production run, and mail your merchandise (we'll have to charge for shipping). Specialty teeshirts and perhaps a few other items will also be available at the Competition for sale without preorder – cash or credit card. The organizers are not making a penny from these sales – we just want you to have the opportunity to get some cool stuff.

SHOP SUPPORT

No machine shop support has been arranged for BSA15. Be advised that Auburn is not an industrial area. Baja cars are expected to arrive ready to race. The NCAT site is rough, and the dug and built obstacles just make it worse – it would be wise to bring spares.

FRIDAY & TECH INSPECTION

Friday is Static Day. As in all Baja Competitions, the progression will be: 1) Engine Check by Briggs & Stratton (best to have already done this Thursday afternoon); 2) Tech Inspection; and 3) Brake Test. In that order. Engine Check and Tech Inspection will take place in the Garage Building on the Lower Paddock (my apologies to you Upper Paddock folks – there is no way to both give fair access and have sufficient paddock capacity at the same time). Brake Test will be in the nearby Fueling Area/Acceleration Event site, and will be on asphalt.

COST

Cost Judging will be finished up with audits throughout the day on Friday. Cars that need to be audited will be summoned. Cost will be co-located with Tech.

DESIGN

Cars will be weighed and measured as they check in for Design Judging. Curb weight and weight split will be written on a label and stuck to the car. This label must remain in place throughout Design Judging. The weights and measurements for the entire Competition field will be posted after the North American Baja season concludes with Baja SAE Oregon 2015. Cars which have not been weighed will not be allowed to enter Design Judging.

Design Judging follows the system piloted at Auburn in 2012 and adopted by Polaris. Each car will have an assigned Bay location (in the Design tent) and an assigned time slot. Polaris will create a schedule of where and when each car must appear for Design Judging, and we will post it on the BSA15 website as soon as we get it. Teams must check in for Design Judging at least 15 minutes before the start of their time slot. Each car will be met in its assigned Bay at its assigned time by a Panel of three or four Design Judges. The team must:

- Set up for Design Judging (car, displays, and other aids).
- Deliver an overall introduction to the car's design to all of the Judges.
- Break up into conversations between smaller numbers of Judges and team members to review the car's systems.
- Break down the team's Design Judging setup and leave.
- Allow the Judging Panel time to discuss and record scores and impressions.
- All within the specified time before the next team comes along.

So be prepared.

Remember that your Design Judging Panel has read your Design Report, and will probably ask you detailed questions arising from the Report. But don't assume that each Judge has total recall of your Report.

In all conflicts between the Tech line and the Design Judging schedule, Design Judging takes precedence – you must show up on time to get any Design points. The Tech line may be able to work with you.

PRACTICE TRACK

A simple Practice Track will be available to cars with complete three-part tech stickers (Engine, Tech, Brakes) that need a little shaking out. Don't expect to train your drivers or fully cycle your suspension on this Practice Track. It will be located in the Endurance starting funnel. The Practice Track will be open on Friday and Saturday.

SATURDAY

Saturday will be another busy day, with four short dynamic events: Acceleration; Hill Climb; Maneuverability; and Suspension. Acceleration is in the Endurance Fuel area.

Maneuverability and Suspension are on West Hill at the west end of the site. Hill Climb is off the south tangent of the NCAT asphalt track, a little east of West Hill. All four events will be open all day, and they may be run in any order. All short events will use the “Control Zone” concept for movement of cars into and through the event course. Please review the Control Zone policy, to be posted soon on the Competition website.

ACCELERATION

Acceleration will be two-by-two, drag race style. We have a light tree and photo gates. The surface is asphalt.

TRANSIT SYSTEM

West Hill (Maneuverability and Suspension) is a long way from the paddocks, but West Hill is a great piece of ground, and we think the exciting Suspension course we built there is worth the need for transportation. To get to West Hill, a fleet of hay wagons will run all day on Saturday and Sunday, circling counter-clockwise around the NCAT asphalt track. Hay wagons are for people and gear. Baja cars may follow the hay wagons. The basic Baja rule - walking speed everywhere except on an event course - is specifically amended to allow a Baja car to directly follow a hay wagon at the hay wagon’s speed. Baja cars may not pass any moving hay wagon, under threat of severe point penalty or disqualification. Spectators, visitors, and friends are welcome on the hay wagons. The hay wagons will stop at: Headquarters; Endurance Viewing Area (Sunday only); West Hill (Saturday only); Hill Climb (Saturday only); and Spectator Parking. Teams may bring fuel tanks on the hay wagons as a means of direct transfer between the Fueling Area and the West Hill Fuel Dump. Competitors, spectators, visitors, and friends must not walk on the hay wagon path, and are required to stay on the shoulder of the asphalt track.

MANEUVERABILITY

Maneuverability is around a combination of trees and cones. Hitting a cone will cost you a time penalty. But if you hit a tree ... well, you’ve hit a tree (we’re not completely heartless – we’ll push you off the tree, but there will be a penalty for the assist). You should make sure that you know how to reliably oversteer (drift) your car. The surface is mostly loose dirt, with rock fragments (the rock is called Auburn Gneiss – really!). The course is on a well-drained hilltop, and so even if the weather is wet, the course should still be fine.

SUSPENSION

Suspension gets worse every time we do this. We put particular attention into turning up the evil meter. Spare A-arms might be wise. Hopefully, your chain is guarded from the bottom. And do think about the sufficiency of your jounce bumpers. You’ve got: a downhill start; then over the half-pipe (concrete pipe, only half buried); the bumper-tires; the Fan (off-camber turn over radial telephone poles); drop into Northeastern’s Jump (higher this year, with a bit more of a ski jump flip to it); short, medium, and long recovery lanes; the Stairs (full-height railroad ties); an enhanced Rock Slide; and then a climb up through – my goodness, I’m not sure what we’re going to call it, but it’s rough; the off-camber railroad ties (tends to roll cars even as they point straight and level); the

Flip Tie (in case we missed rolling you); and then we put in a new jump in at the top of the deep downhill off-camber finishing turn, just for fright. Rescue ATV's will be available to tow the wreckage back to the paddocks.

[History: Northeastern did a 360 in pitch over the big jump, landed on its feet, kept running, and got its best run of the day. Three years later, they did the same thing. That makes it Northeastern's Jump. But don't try this – if you get less (or more) than 360, you will be DQ'd and sent back to Tech.]

WEST HILL SPECTATORS

Spectators on West Hill must stay behind the spectator control snow fence on the inside of the fenceline road, and down the north side of the Suspension course.

HILL CLIMB

This is a driving hill climb, with off-camber (across the hill face) and switchbacks. About 300 yards, with two switchback turns, one uphill box turn, and a fishhook to finish. The beginning of the control zone is on the NCAT asphalt track, just east of the access road to West Hill. Cars will descend to the bottom of a deep embankment, start, drive the course up the hill opposite the embankment, and exit over the ridge towards West Hill. Cars may then follow a hay wagon back to the start of the control zone. The entire course is visible from the asphalt track, and teamers and spectators should get a great view from the hay wagon stop.

SUNDAY ENDURANCE

Endurance will follow the same course used in 2012. It's meant to be more of a trophy truck course (death by one thousand tooth-jarring bumps) and less of a rally course (i.e. you already survived the Maneuverability forest, didn't you?). Now, every Baja course designer says their course is the worst, and no car will survive it, et cetera, et cetera. But speaking realistically, as your friends, we think that for the Auburn race you should put some thought into how you are going to keep your car from being pounded to death.

It's that same terrain with the loose dirt and Auburn Gneiss – the schist helps make the course all-weather, but there are still plenty of deep pockets of goo (if these do not get water-activated, then the course will be thick with dust – might want to rig up a breathing filter for your driver). Starts with a meander through the woods (plus the occasional unannounced 3 ft. drop-off, backhoe madness, etc.). There's a fan (see Suspension) in the left hook at the bottom of one of the free-fall hills – fortunately, there is an access road right there, up which your pieces can be swept. Then the course comes out onto a road for speed, ending in a rock garden. The Mu (as in, shaped like one – the points are uphill, and the belly of the mu is a downhill off-camber sweeper) was apparently too much fun to drive, and so it had to become worse. You know - 45° trenches and such. Then another road section, but we've torn it up for jumps and moguls - it's amazing what you can do with Jersey barriers. More sand in the sandbox (plus it's washed down course, so there will be plenty of slipping and sliding), and Skid Road (or Log Jam – we use both names) has been rebuilt to better than new (that's worse for you - might get your driver a mouth guard to go with the dust mask). Home free after that, except for a huge Table

Top and the NCAT Short Line (unimproved rail crossing), and another drop-off while you're heading downhill into the off-camber hairpin. The rubble at the last creek crossing is just there to irritate you. Anyway, that will be one lap down, and so then you can try another!

ENDURANCE ACCESS

The Endurance course may only be accessed by Baja drivers (while racing), course workers, recovery ATV crews, and Competition officials. No one else is permitted on the course or the network of access roads serving the course. Team members not driving may observe from the designated spectator areas (delineated by snowfence and signs), but may not enter the course or access network. Damaged cars will be removed by recovery ATV's, as ATV's become available, and taken along the access roads and fenceline road back to the Paddocks. Recovery will be faster if your car's paddock marker is intact and visible.

ENDURANCE SPECTATING

There is a spectator area on the south side of the Funnel (a few chicanes to see, plus the finish – respect the snow fence!). Another great spectator area is on the asphalt track opposite Skid Road, the Table Top, and the NCAT Short Line. People who like broken cars will enjoy this area, which we sometimes call the Grandstand (no seating available – bring a lawn chair!). There is also a spectator gallery on the far west end of the course by the Turnpike Jumps – this is about a mile from HQ, and accessed from an access road leading west from Skid Road. The hay wagons will continue to rotate on Sunday, stopping at: Headquarters; Grandstand Area; and Spectator Parking.

ENDURANCE COURSE AVAILABILITY

The Endurance course is open to competitors and spectators from Thursday morning until sundown on Saturday. Drivers are encouraged to walk around and cogitate on strategy & tactics. Spectators might want to scope out spots for action shots, and how to get there.

AWARDS PICNIC

Nope. It's not a banquet. But we'll get you some food after the Endurance race – Auburn's Samuel Ginn College of Engineering is pleased to provide BBQ. We'll hurry to get the scores tallied, and call y'all together to hand out awards as soon as we can.

SEE YA!

That should do it for now. The committee of dedicated volunteers, Baja alums and friends, who have built this Competition, are thrilled at the thought of great Baja folks racing great Baja cars at this great Baja site. Good luck, work and drive safely, and we'll see you soon!

Peter Jones
Chief Organizer, Baja SAE Auburn 2015