

## **B\*E\*S\*T Race Day Rules**

These rules are intended to to promote a common understanding of how the races are to be conducted and to make the competition safe and fun for everyone involved.

### **Race Officials**

- Race Coordinators – Oversee all race day operations. Set schedule for day's events. Organize and provides announcing. Act as final authority for decisions involving interpretation and enforcement of rules.
- Technical Inspectors – Responsible for certifying that vehicles comply with the E-car rules.
- Head Timekeeper – Responsible for timing the races and counting laps. Collects, analyzes, and distributes official race results. Leads a team of people who run stopwatches in the timed races and count laps in the Endurance race.
- Track Marshals – Responsible for maintaining a safe racing environment on the track and in the pits during the Endurance race.
- Merit Award Coach – Responsible for coaching the merit award committee.
- Pizza Coordinator – Orders and accepts delivery of pizzas. Organizes distribution of pizzas.

### **Penalties**

Violation of rules may result in a team penalty such as extra time added to a teams score for timed events or lap penalties during the endurance race. Serious and intentional violations may result in disqualification of an individual from driving or disqualification of a team from racing.

### **Drivers**

All drivers must wear a helmet that is fastened securely and shoes (not sandals) when driving. Loose clothing should be avoided if possible and in any case must be kept away from chains, pulleys, gears, wheels etc. by securing it or by appropriate shielding. All drivers must have practiced starting, stopping, and steering their car, at some time prior to the race. In particular, each driver must know how to safely steer the car around obstacles and how to quickly remove power and apply the brakes. The driver in the slalom race should understand how fast the car can go and still swerve without tipping, and how to slow to a safe speed and make a wide U-turn without tipping over or damaging the car.

### **Cars**

A technical inspection of each car will be conducted before it is allowed to race. All cars must comply with the E-car rules.

### **No's**

- No climbing or sitting on the fence. No lifting anyone over the fence. (It is OK to hand tools and materials over the fence.)
- No running, jumping, or climbing on the grandstand; no one allowed under the grandstand.
- No chasing cars around the track and no running onto the track during a race.
- No one is allowed in the infield during the Endurance race except the 3 person crew working on a broken down car.
- No running behind and pushing a car. During the Endurance race only, cars may be shoved out of the pit area with arm motion, however in the Drag and Slalom races the cars must start

under their own power. (Exception: See the rule about pushing a broken down car in the Endurance race section.)

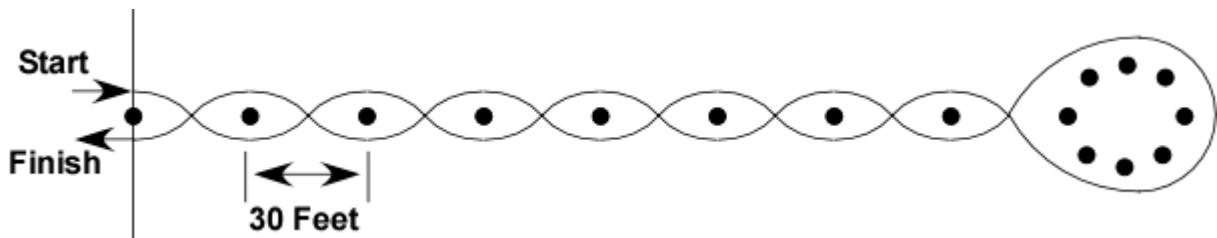
- No jeering, mocking, or mean spirited remarks.
- No second-guessing of the pit boss's decisions by students. If the pit boss decides to hold a car, waiting for traffic, students are not allowed to criticize the pit boss's judgement. A few more seconds in the pits won't matter in the outcome of the race. (If the pit boss releases a car in a situation where it would have been safer to hold it in the pits, a teacher, mentor, or track marshal may provide a few words of coaching to help prevent a recurrence.)

### **Drag Race**

The object of the drag race is to have the lowest elapsed time between the start and finish. The cars will line up at the starting line, approximately 100 yards from the finish line. The cars will race the length of the track upon the starter's signal. Each car must stay in its assigned lane and the driver must stay in the car until the announcer says the race is over and that drivers may get out of their cars. The time for each car will be recorded. There will be a time limit of two minutes to complete the course. Any car that has not crossed the finish line after two minutes will receive an elapsed time of two minutes. All cars will run the course once and then the fastest 4 cars will race again in a final race to determine the winner.

### **Slalom Race**

The object of the slalom race is to have the lowest elapsed time navigating the course between the start and finish. Each car will be timed. Five seconds will be added to each car's time for each cone that it runs over and for each failure to slalom between the cones (i.e. two successive cones are passed on the same side); however if the same cone is involved in both situations, e.g. the cone that is hit is also one of the two that is passed on the same side, then this will be a single 5 second penalty. There will be a time limit of three minutes to complete the course. Any car that has not crossed the finish line after three minutes will receive an elapsed time of three minutes.



The course will be 150 to 250 feet long (depending on the track layout). The cones will be spaced 30 feet apart and end in a circle of cones 30 feet beyond the last slalom cone. The cars will start two one side of the first cone and then weave through the cones, make a U-turn around the circle of cones and slalom back to the start/finish line. (Note: The slalom driver should understand that if the car misses a slalom and passes two cones on the same side, then the best thing to do is just continue to slalom the remaining cones. Moreover, this may mean that the U-turn will be in the opposite direction from what the driver expected and/or that the driver may finish on the "wrong" side from what the driver expected, but there is no penalty for either of these.)

## Endurance Race

The object of the endurance race is to cover the most distance in the amount of time allowed for the race. The time allowed for the race will be determined by the race officials based upon the time available and whether all drivers have had a turn to drive. The race will last about 45 minutes. The end of the race will be preceded by a warning about 5 minutes before the end and a countdown will start 1 minute before the end. Full laps completed as of the moment of the end are counted; partially completed laps do not count toward the car's score.

Drivers must be changed each lap. Drivers should pull over into their pit area and not just stop in the middle of the track in front of the pits. The car must come to a complete stop before the driver exits and must remain stopped until the new driver is seated and has hands and feet on the controls.

The pit crew is allowed to work on the car during the race as long as the car isn't moving. During the Endurance race each car may have no more than 12 people in the pit area at any time. Drivers and crew must stay in their own pit area. The area just outside of the track fence adjacent to the pit area is also reserved for the members of the team.

Each pit will have an assigned pit boss, identified by a red armband provided by B\*E\*S\*T. Two or more students can trade off being pit boss, but this job probably should not be passed around so that everyone has a turn, rather one or a few of the most responsible students (or an adult) should do it. Whoever is wearing the armband is responsible for team safety, keeping team members in the pit area and away from traffic, responding to direction from the track marshals, and particularly watching for traffic to safely direct the driver out of the pit area.

This last item is especially important because the potentially most dangerous part of Race Day is a collision caused when a driver pulls out in front of an oncoming car. Please rehearse the procedure below in the classroom with a pretend car, and also with the real car during driving practice:

As soon as the car has come to a stop, the pit boss should stand to the side of the car (the side nearest the pits and farthest from the middle of the track) just ahead of the car near the front wheel, but not in the path of the car. The pit boss must face the car and hold a "Stop" sign (provided by B\*E\*S\*T) directly in the forward line of sight of the new driver. While the new driver is getting into the car, the pit boss should look up the track and watch the oncoming traffic. When the driver is ready to pull out and *there is no nearby oncoming traffic*, the pit boss should step to her or his left, swing the stop sign aside, and wave the driver out onto the track. *Drivers and pushers must watch the pit boss for permission to pull out!* A teacher or mentor should literally back up the pit boss (stand close behind him/her) and provide coaching to the pit boss as needed, especially in the early part of the race.

If a car breaks down, up to 3 crew members may cross the infield to the breakdown. The car should be moved to the edge of the track adjacent to the infield or off of the track and into the infield for work. If it needs to be pushed back to the pits, it should stay close to the infield edge of the track.

### **Merit Awards**

Each team will designate 1 student to be on the merit award committee. This committee will meet for 10 minutes at a designated time to receive some instructions, again for another 5 minutes to choose a merit award to be presented to each car, and finally will help to announce the merit awards and present the certificates. Participation on this committee will not interfere with the student's ability to drive or participate with the class.

### **Presentation**

Each team will prepare a 2 minute presentation about their car. At a designated time one, two, or three, students will be interviewed for one minute about some interesting aspect of their car, and then they will be handed the microphone to talk for 2 minutes about what it was like to design and/or build the car, practice driving, prepare for Race Day, something interesting that happened, involvement of others at the school, the meaning of symbols on the car's flag, etc. -- any topic about their participation that they want to talk about.

### **Clean Up**

Each team will designate 4 or more students that will report to the track officials when clean-up time is announced. These students will be assigned an area of the track or grandstand to pick up trash or help to organize the facilities. Clean up should take about five minutes.