



Box Car Construction Specifications

Car Design, Construction and Regulations

Box Cars may be built by participating team or participants may purchase pre-manufactured cars. All cars must move only with the aid of gravity and have adequate braking and steering systems. Modifications to purchased cars are permitted to ensure adequate safety systems are installed. No motors (electric or gas), or any other mode of propulsion may be used and Box Cars must move down the race track with only the aid of gravity.

Embellishments and design liberties to all cars is encouraged. Examples of car design range from realistic looking cars to imaginary vehicles such as a couch with wheels, a mini fire engine or even a guitar. A very loose interpretation of the car will be used by officials inspecting the vehicles, but safety will be of top priority. Achieva Credit Union officials reserve the right to refuse any vehicle from competing in the race if deemed to be unsafe for any reason.

Car Dimensions

1. *Car length* - minimum of 48 inches and maximum of 96 inches.
2. *Car height* - maximum of 48 inches from ground to highest point of Box Car.
3. *Cockpit opening* (if applicable) - minimum of 14 inches wide, 25 inches long and 16 inches high.
4. *Ground clearance* - minimum of 3 inches from bottom of floor to ground.
5. *Wheelbase* (from tip of front wheel to back of rear wheel) - minimum of 48 inches and maximum of 90 inches.
6. *Wheel width* (from outside edge of wheels) - minimum of 24 inches and maximum of 48 inches.
7. *Ramp clearance* - Ramp angle is approximately 12-15 degrees. Recommended maximum of 6 inches from front wheels to nose of the car to ensure clearance.

Car Weight

1. The maximum total weight of a Box Car is one hundred fifty (150) pounds, including all removable parts and embellishments.
2. The use of additional weights in Box Cars is permitted.
3. Additional weights (with the exception of the driver) must be safely secured to the car, and are subject to inspection by Achieva Credit Union officials for approval.
4. All additional weights must be secured in the box car prior to inspection. Additional weights may not be added in the pit area or starting ramp area under any circumstance. Carrying weights in pockets/clothing is prohibited for safety reasons.

Box Car Body Requirements

1. Cars in the Homemade car division may be built in any shape the driver/builder desires as long as the driver's vision is not blocked in any way.
2. Cars in the All-American Soap Box Derby style car division must follow the specified body styles of the All-American Soap Box Derby.
3. Minimum of ½" plywood must be used for the floor.
4. No windshields of any kind will be permitted.
5. Interior area must be open for inspection purposes.
6. A seat may be used but must be removable for inspection.
7. It is recommended that all exposed edges of the cockpit opening have pipe insulation or equivalent padding for driver safety.
8. Only quality wheels and axles are permitted.
9. No tampering or altering of wheels or axles is allowed; wheels may be painted.
10. Wheels must be secured on axles with cotter pins or locking nuts.
11. A minimum of 2" x 4" pine or equivalent strength metal must be used to secure axles to body.
12. Steering is required on all Box Cars, and is subject to inspection.
13. All cars must be equipped with a minimum of braking capability consisting of a hardwood block connected to a hinge and pedal system, so as to contact the ground when pedal is depressed.
14. The use of any liquid lubricant, such as WD40 or silicone is allowed on the wheel bushing and steering components.
15. No method of propulsion can be used.
16. No alterations to car after the inspection process will be permitted, including in the pit area or on the starting ramp.