

Gravity Racer Safety

Gravity racing by its very nature carries some risk, but by design, engineering and good practice this can be minimized.

Our racers are built using the basis of the technical soapbox regulations of the Goodwood Festival of Speed. This created a Gold Standard of the sport. It also set the first technical regulations of a gravity soapbox. Our racers adhere to this and therefore event in any race worldwide.

Soapbox gravity racing is also an extreme sport for adults with speeds in excess of 85mph. Our Formula Gravity soapbox kit is designed and built for this, but it is also fantastic for schools and colleges to build and event at much lower speeds. (Up to about 30mph).

The fact that it is built to such high technical specifications makes it the safest project of its type for youngsters, and ideal to teach vehicle and driving safety. Education being the best way to safety.

Our racers were first designed and built using professionals in 2002 for the 2003 Goodwood Festival of Speed. Since then we have produced more than 200 kits, which have been evented extremely successfully around the World gaining many records. Safety and design of our racers have been constantly improved as speeds and demands on our vehicles have increased over the years.

Our designs and builds are now at the forefront of the sport.

As we have not actually completely constructed your racer we do strongly recommend that you have your finished racer checked by a competent engineer.

If you are entering an event your racer will be scrutineered before you can run. The organizers may be able to advise on an engineer. Your local STEM organization could also help.

Some of the design safety features of our gravity racers

- Original spaceframe professionally designed by Anvil Ltd. Aircraft designers.
- Crash tested by Anvil to 20 g
- Driver protected in 'cage'.
- Substantial roll-over bar sited beyond the top of the driver's helmet in a suitable position to protect the head, neck and spine.
- Second substantial roll-over bar to protect the drivers hand on the steering wheel / handle.
- A front roll-over bar to complete the 'cage' protection.
- All spaceframe welds to be of professional standard.
- Supportive seat and metal back support.
- Toughened alloy suspension parts.
- Four point harness.
- Disc brakes on rear axel.
- Parking brake.
- Wheels designed to have improved side force strength: wide hubs, 48 spoke, 30mm wide steel axel.
- Quality tyres.
- Low centre of gravity.
- Easy access and exit.

We do recommend the fitting of nerf bars if racing against other racers together, to prevent wheels becoming entangled.

Driver safety

The driver should wear :-

- Full-face helmet of a good standard.
- No bare skin, so overall. Kart suits are good.
- Sturdy shoes.
- Good leather gloves.

The driver should be very familiar with the racer.

Lots of practice runs for training and experience to reach a suitable competent level for the event.

Skills learnt Kart racing are exactly those needed, so perhaps a visit to a local Kart track might help.

It will help if there is any film of the previous event.

The driver should know the flags that might be used on the track to give essential information, and the duties of track Marshals.

The Driver must always walk the track before the race.

All events have Drivers meetings at the start.

Build safety

Normal school / college workshop safety practices apply.

Our racer build involves use of pillar drills and tapping screw threads. Pot riveting. Spanner & screwdriver work.

Then whatever bodywork chosen.

Basically a competent DIY garage job. No welding is required.

Your own school / college Risk Assessments should cover this.