

# GISPA race regulations

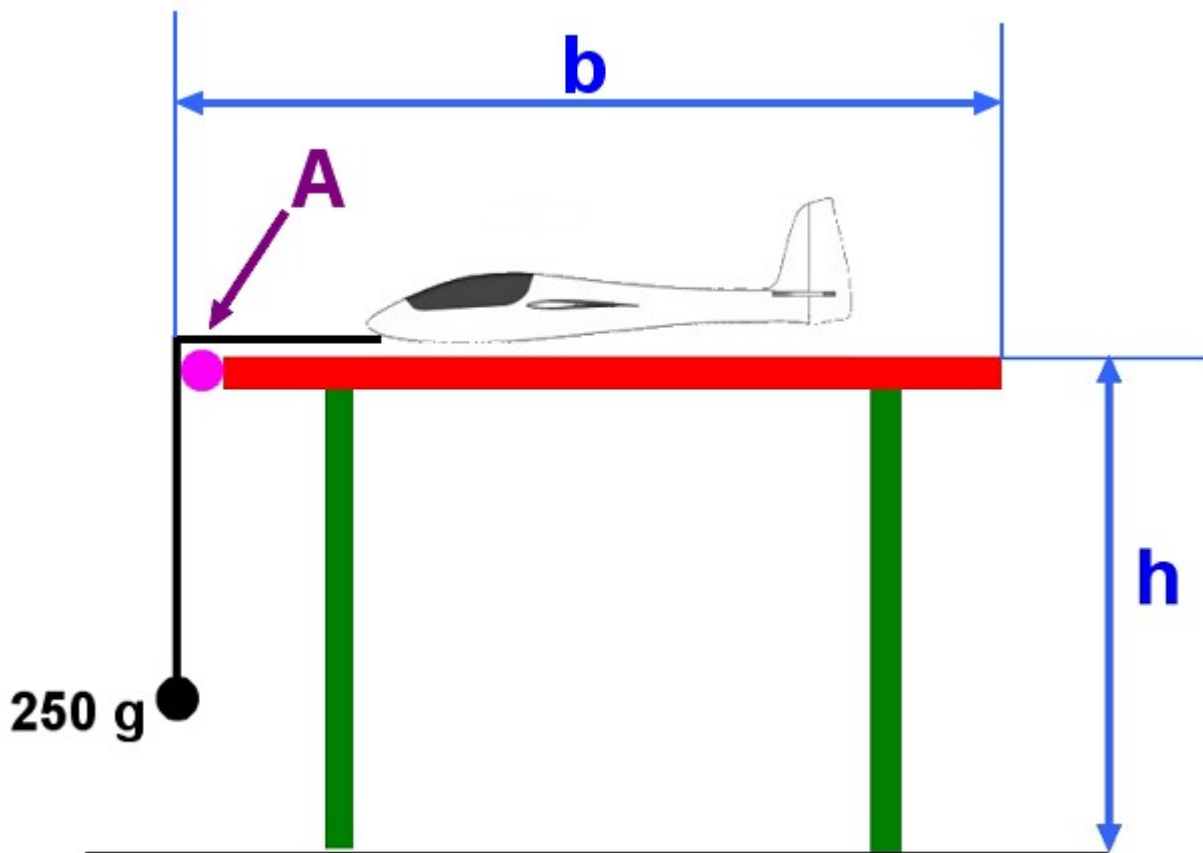
## Race classes

- a) Gold Class
- b) Silver Class
- c) Bronze Class

## GOLD CLASS

Glider model with the following requirements

1. maximum wingspan 1400 mm
2. made with 3D printer that uses 3D technology FFF. All of the aircraft components must be made with 3D printer. Also the eventual joining screws must be realized with the 3D printer. On the aircraft, the only component that is not coming from the 3D printing can be the adhesive for bonding parts (glue).
3. the aircraft must be launched with a horizontal sledge. The aircraft must be moved over the sledge with a catapult. The catapult should be driven by a ballast having a maximum weight of 250 g. (you can use lower weights). The drawing below shows the construction scheme of the catapult. The aircraft detachment from catapults should be at point A.



## SILVER CLASS

As the Gold Class with the difference that the glider can be realized with any construction technology; 3D printing is therefore not necessary. The aircraft must be launched, however, always with the slide with the same characteristics of the slide-catapult described in the Gold Class.

## BRONZE CLASS

As the Silver Class, with the difference that the airplane can be launched by hand (without the slide-catapult).

## Victory conditions

The model glider that will have the greatest aerodynamic efficiency will be the winner. The aerodynamic efficiency will be determined as  $E = x/h$ .  $x$  is the horizontal distance traveled and  $h$  is the starting height..

**Race procedure**

1. each school can participate with more models and more teams in one or more classes of the race.
2. each model glider can carry 10 launches
3. for each model you will consider the top 5 launches
4. glider aerodynamic efficiency will be calculated as the average of efficiencies of 5 launches considered
5. the height  $h$  of the slide must be 2000 mm. The length  $b$  of the slide must be 2000 mm (only for the Gold Class and the Silver Class)
6. each institution should build a launch sledge for its aircraft (only for the Gold Class and the Silver Class)

**Race date**

October 14, 2017

**Race site**

Flight museum Vollandia, which is adjacent to the intercontinental airport of Malpensa, in Italy