

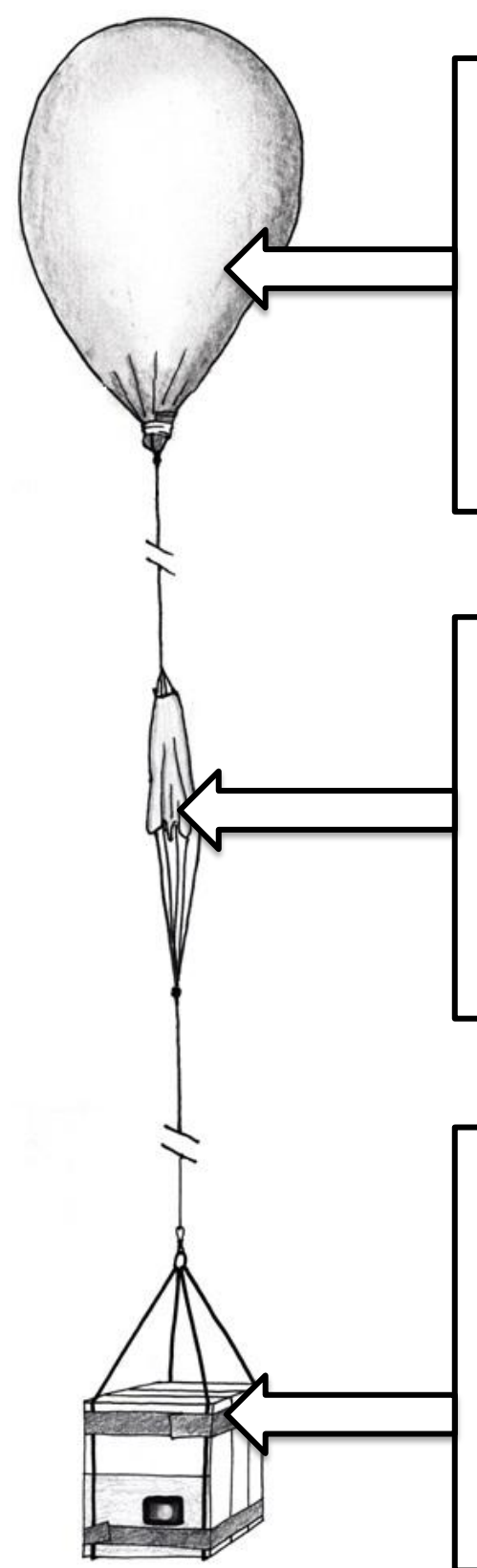
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## Project IKARUS

### High Altitude Ballooning

The aim of High Altitude Ballooning (HAB) is to send a camera or other scientific equipment as high into the sky as possible in order to capture breathtaking pictures of our planet or to gather scientific data of the atmosphere. It is easily possible to reach altitudes up to 38'000 meters above ground level depending on the balloon size!

#### How does it work?



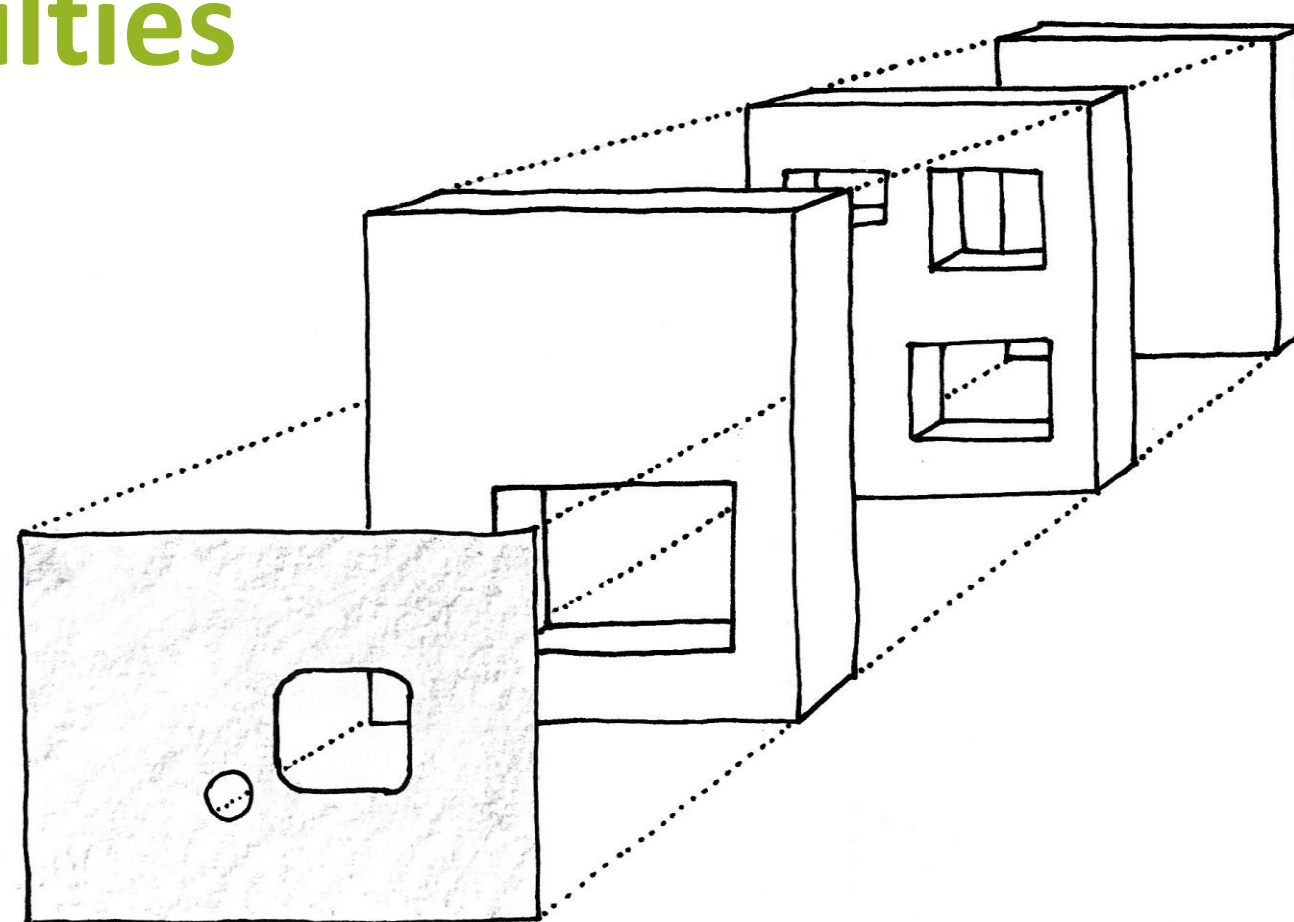
The latex weather balloon is filled with helium. It provides lifting force to the probe. While the balloon rises, the surrounding air pressure drops dramatically. Therefore the balloon expands up to a diameter of 10m before it bursts at an altitude of approximately 32'000m.

The parachute is part of the connection rope as long as the balloon is lifting the probe. After the balloon bursts, the parachute opens and if it works properly, it will land the capsule safely on earth's surface.

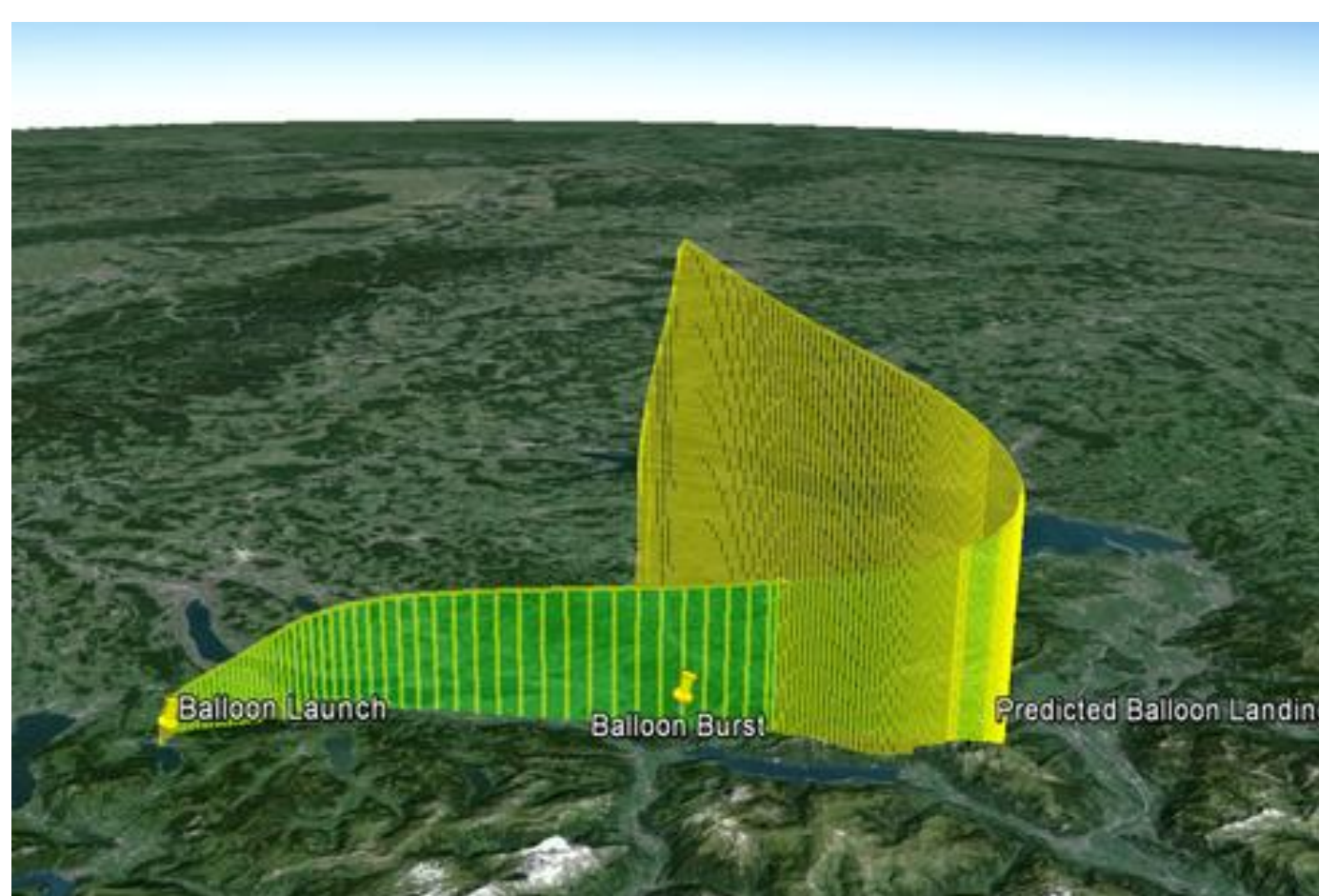
The capsule is the key element of the construction. It protects the devices from the harsh conditions in the stratosphere, absorbs the shock of a hard impact and keeps the equipment afloat in case of a water landing.

#### Keep it simple to avoid difficulties

A very simple way to build a sturdy capsule is the "sandwich principle" using thick layers of styrofoam. The camera is placed in the front layer, covered with cardboard and insulating foil to hold the camera heat inside. Other devices find their safe places well covered by styrofoam inside the middle layer.



#### Flight preparation and capsule recovery



Check your flight with the landing predictor <http://predict.habhub.org/>

A careful preparation of the flight is essential for a successful mission. Predict the flight path in order to find a good landing zone. Choose clear weather for stunning footage. Make sure that there is no conflict with local laws concerning the flight permit. After every HAB mission there is an adventurous recovery trip waiting for you. Your device may end up in a tree, on a roof or even in a lake. Be prepared for everything!

