

CanSat Final Assembly

Preparing the Can

- First, the top of the can needs to be removed. This can be done with an inexpensive manual can opener. A razor knife can be used but be careful. The top of the can may be sharp.
- Next, drill a hole in the center of the bottom. Use a 7/32 size drill bit.
- Drill two small holes on the side of the can opposite of each other. These holes allow the air to circulate inside.



CanSat Assembly

- Connect the battery to the CanSat.
- Slide the structure into the soda can. Be careful to not touch the circuit board or battery to the side of the can.
- On the bottom of the can, align the antenna thread hole with the hole in the soda can and screw in the screw eyelet.
- Secure the parachute to the screw eyelet.



Preparing for Flight

Deciding Tasks in the Group

- There are four tasks during the CanSat launch. The first one is to prepare the CanSat for launch. Each group will do it one at a time. Since all the CanSats use the same transmitter frequency, only one is allowed to be turned on at a time.
- The next three tasks are performed at the same time. Two people are needed to track the CanSat once it is deployed. A visual track is needed all the way to the ground so the CanSat can be recovered. One person is to be down wind of the range while the other is at the range. FRS radios should be used for tracking communications.
- One person is needed to hold the antenna and point it toward the CanSat as it floats back down to the ground. The audio from the receiver will be used to make sure the antenna is pointed the right way. The fourth person will be at the computer making sure data is being received. If not, the fourth person needs to tell the antenna person to adjust. Rotating the antenna may be required to get a better signal.

Experimenting

- **Take the ground station outside to experiment with the telemetry. This will also provide experience in setting up the ground station. The ground station requires a table and power supply. The power supply can be a car battery or UPS with a DC power supply. Once everything is set up and turned on, each group will practice handling the ground station.**
- **One person should go out in the field with the cansat and turn it on. The people at the ground station should verify that the ground station is receiving telemetry from the CanSat.**

Launch Rules

- **At the field, we will be located at the launch line. This is the line where everyone must stay behind for safe operations. There is a Range Safety Officer or RSO who controls access to the range. The RSO makes sure that no one is on the range and there is no aircraft in the immediate area. If you do not obey the RSO, the RSO can throw you off the field.**
- **The field for the summer camp launch is on a sod farm. For most of the area, there will be grass. There will be areas that are dirt or newly planted grass. The landowner will tell us what fields are newly planted and give instructions on how to walk on the field. They may limit the number of people who can be on the parts of the field at any time. You need to follow those instructions.**
- **Bring lunch and lots of water. Depending on the weather, you may need up to a gallon of water. Bring sun screen and hats. You will be out in the open. There will be a canopy set up. That is where the ground station will be set up.**

