



Technical Board

IIT Guwahati



Aeromodelling Club

JIT Guwahati

PACKAGE DROPPING MECHANISM

GC Points – 300

Date – 22/10/2018

Venue – Aeromodelling Club, New Sac

Time – 18:00

Last Updated – 20: 00 | 4/10/2018

Contact Details

Manik Mittal

8283902212

mittalmanik1998@gmail.com

Format of the Competition

This competition requires the participants to design and fabricate a package dropping mechanism, capable of dropping a cubical package weighing about 1.5kg, from a height of about 5 m using a rope or string and a clipper mechanism to which the package is hooked.

Design Constraints

- The total weight of the whole mechanism must not exceed 0.7 kg(without batteries) and lesser weight would lead to higher score.
- The mechanism can be controlled manually (wired/wireless) but the clipper must have no wires attached to it for releasing the package, also it must have its separate batteries.
- The size of the package used would be 15x15x15 weighing 1.5 kg along with the hook to attach the clipper.
- The rope along with the clipper needs to be rolled back to the dropping mechanism after releasing the package.
- The clipper (to which the package is hooked) must communicate with the delivery mechanism using wireless communication for releasing the package.
- The dimension constraints are:
 - Length < 20cm
 - Breadth < 10cm
 - Height < 10cm
- Lesser dimensions would lead to higher score.
- Watch this demo video : <https://youtu.be/MSCNirll0sI> (Just the delivery mechanism)
- The package dropping should be smooth and the time taken for drop must be greater than 4 seconds.

| Competitive Parameters | Max Score |
|---|------------------|
| Weight* | 30 |
| Length* | 20 |
| Breadth* | 20 |
| Height* | 20 |
| Time taken to complete the delivery* | 30 |
| Weight handling* | 20 |
| Overall working performance | 40 |
| Clipper mechanism | 70 |
| Rolling back | 40 |
| Rolling down | 50 |
| Package dropping* | 50 |
| Control | 50 |

***These parameters will only be evaluated if the mechanism is found to be working as expected to avoid any kind of discrepancies.**