Management of Launchsite by Student

2017/12/04
@UNISEC-Global Student presentation
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Presentor

Kyohei Yashima
• Tokyo Institute of Technology
• Research area: deployable membrane
• Representative of UNISON-Japan, Rocket WG
Back ground

• In Japan, **17 teams** are developing and launching about **30 hybrid rockets** in 2016

• We have **three launch site** for hybrid rocket, Noshiro-Akita, Oshima-Tokyo and Kada-Wakayama

• All experiments in these launch site mainly **managed by students**
Launch site in Japan

• Noshiro - Akita pref.
  ➢ Most biggest launch site for hybrid rocket
  ➢ The event in August contain Rocket, CanSat competition

• Kada – Wakayama pref.
  ➢ In this launch site, we launch mainly model rocket
  ➢ Lectures of rocket girl & boy
Oshima

- 90.76 km$^2$, about 7600 people
- Famous for camellia & Mt Mihara
- The only desert in Japan
Management team

• Three main role (student)
  ➢ Representative
  ➢ Experiment manager
  ➢ Safety review manager

• Representative
  ➢ Adjustment with the Oshima town office, airport, Tokyo metropolis

• Safety management personnel
  ➢ From the university of the participating team

Diagram:
- Haneda airport
- Tokyo metropolis
- Oshima town office
- Student rep.
- Safety management personnel
- Experiment manager
- Safety review manager
- PM of each team
Schedule

Registration
- Correct the information about team by using Google foam

Kick off
- Hold kick off meeting and announce about the point of launch

Safety review
- Each team make document about safety of rocket launch and checked by management team

Launch
- Go to Oshima by ship
- Launch
Registration & Kick off

• 4mounth before the experiment, we start to correct information, because of the application

• Kick off meeting
  ➢ Announce about the point of safety review
  ➢ Behavior in the desert
  ➢ Check the schedule
Safety review

- From the kick off meeting to launch day, we perform two review

- Reviewer are the OB of each team

- Participating team write down the document, and reviewer team check each item (structure, propulsion system, recovery)
Application

• Haneda airport office
  ➢ To make launch window
  ➢ The fright path to Haneda airport are above oshima
  ➢ In Japan, in the case of launch more than 150m, we need to apply

• Tokyo metropolis
  ➢ 98% of oshima land are environmental protection area
Launch

• Set up the launcher

• Final review
  ➢ Mainly check the center of gravity and size
  ➢ If the error of CG is larger than 10%, the rocket can’t launch

• Launch operation
Launch
Participation from other country

• South Korean team contact us to launch hybrid rocket in Noshiro

• Difference of law
  ➢ Treatment of the high pressure gas and explosives

• To make it easy…
  ➢ Make a checklist (or database ?) of difference of law
  ➢ Early announcement and opening of registration
Summary

• Through the management, we learn about the adjustment with the stakeholder of our launch

• For global and more convenient launch, we should prepare

• Come to Japan and launch rocket

Thank you!!
Reference

https://kadaevent.space/experiment/outline/
http://gojinka100.blog27.fc2.com/blog-date-20110707.html