The record of Windnauts 2015

In 2015, We Windnauts attended Birdman Rally. Birdman Rally is longstanding Human Powered Aircraft (HPA) tournament in Japan. We took part in distance section, which is competing in distance from platform to landing on the water. This year, we were favored with fine weather throughout the rally. And get the record...

35,367m
in 38th Birdman Rally

We became the champion in 38th Birdman Rally, distance section. This record was the second farthest, the farthest is also our record in 2008, in the successive record. In addition, our fright got 'The Best Birdman prize' and 'The Mayor of Hikone prize'.

The contrivance of Windnauts 2015

In 2015, we decided on themes ‘Win the Birdman rally in any conditions’ and ‘Safe and reliable management’. At rally, various conditions were assumed. We thought and made countermeasures. And Windnauts is the very student manufacturing project. So we thought how soften economical, healthy and mental programs is also important.

Manager
During working, makers could not take care of management. So manager tried to announce some events, a load test for instance, and intermediate between each section. Working is terrible. So he also tried to give advice and do mental care actively.

Pilot
There were strong wind from lake to shore around platform. To realize the former theme, the training gives priority to high rotational speed than long time pedaling. To realize the later theme, pilot did health care cautiously and we reliably became aware of pilot is also important component in HPA.

Designer
To realize the former theme, design concept put emphasis on a wind above the lake.

Our plane designed middle speed and short span. And tail beam made rigidity for raising steering performance.

Wing part
We made light and rigid wing. It was separated 9 parts and adapted flying wire.

Propeller part
We made 3 blades propeller. It was made from balsa. It was designed each year.

Driving part
We made driving system. Power was transmitted by shaft made by carbon.

Avionics part
We made speed, altitude, GPS, rotations, rudder angle, gyro, acceleration sensor system.

Flight part
We made flame, sable, center wings, and mount between cockpit and wings.

Steering part
We made steering system which was adopted wire linkage. Most parts were made by carbon.

Fairing part
We made fairing which was designed by expanded polystyrene and balsa.

CFRP
We designed, laminated and heated CFRP beam ourselves. We could make optimum it.

In 2015...
Making lightest and most rapidly
Optimizing design program
Adopting new grease
Developing wireless system
Reconsidering work and epoxy resin
Improving around wiring
Designing considerable cross wind
Designing easy lamination composition
Making aircraft all year

Gross weight 90[kg]
Pilot weight 57[kg]
Speed 7.3[m/s]
Power 220[W]
Span 31[m]

Next generation of Windnauts
In 2016, we refer to 2015’s flight and management and improve them:
- Middle speed HPA
- Early roll out
- Actively contacts
- Designing 7.2[m/s] seek steering performance.
- Doing many test flight making an expert pilot.
- Losing a work program between each section.
- Hot inside of fairing
- Improve intake shape and establish making way.
- Indistinct schedule
- Stipulate schedule and share it.
- Fragile steering and driving system
- Be looking for programs and improve.