

# Laws of Motion 35

Quazi Tarique A Ally

3<sup>rd</sup> Year Student of Department of Computer Science Engineering, Techno India University, Kolkata 700023  
E-mail: [bebetoally@gmail.com](mailto:bebetoally@gmail.com)

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**Abstract**—*LOM 35 is a scratch built handmade & self-designed aero model. The model is made from a material called sun pack. It is not very heavy and has a fuselage length of 35” for more momentum. The wing length is 39” with a wing chord of 7”. Larger momentum and wing chord increases the aero model’s gliding time. There are 4 servos attached to the aero model, two servos for the ailerons, one for the rudder & one for the elevator. These servo motors are of 9 gram each and help in controlling the aircraft when it is airborne. The model also has a brushless 1120 KV motor which produces approximately 1400 RPM and a 30 Amp Electronic Speed Controller (ESC). LOM 35 is also equipped with a 2.4 Ghz 6 channel radio system. A Three cell 2200 mah LIPO battery is the power source of the aero model.*

“Main Text”

*The Designing of LOM 35 began from November 2014 and the designing was completed by mid-December 2014. Final Designing and drawing was completed by January 2015. Building began soon after the completion of drawing on the material used to build.*

*The plane was ready to take its first flight by the third week of January 2015. The first flight was successful. The plane got airborne in less than 5 seconds. Since the plane has a larger momentum and wing chord, the plane glided for more than 90 seconds on power cut (Depending on wind speed & Altitude).*

*The Fuselage length is about 40” (Inches) from the nose to the tail Elevator. The distance between the wing and the tail of the plane is approximately 16” (Inches). Wing cord is about 7.5” with a wing length of 39”. The distance between the wing of the plane and the tail elevator is increased to accelerate the momentum of the aeromodel. The wing of the plane has a higher angle of attack since the plane is based on Ailerons and no flaps. This higher angle of attack helps the aeromodel to land perfectly on cross wind conditions.*

*The Plane’s main structure stands over a material called sunpack. Some materials like Balsa wood were also used to build the wing section making it resistible from inside. Materials like cycle spokes were used as push rods for the servos, it was the only light material found at the time of building.*

*The plane takes off the ground in just a few seconds. Larger chord helps the plane get airborne very quickly. The plane reached an altitude of 500 ft. during its test flight. It has a gliding time of 90 seconds with power cut depending on the altitude and wind speed. Proper Aero Dynamic Design of the model helps it to glide for a longer time. It is also capable of giving live on board aerial video. The Aero Model can also be used for crop dusting and for security surveillance.*