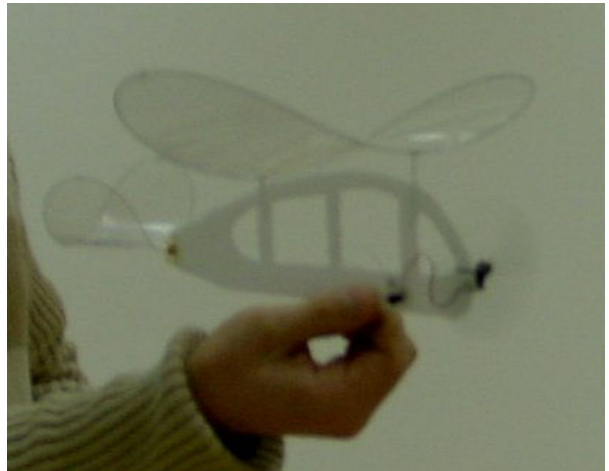


FlyBus example of a slow flying plane

This plane has three original design features

- ultralight and unbreakable wing construction (carbon rod and mylar coating)
- thin fuselage with openings for attractive look, aerodynamic and weight reasons
- special carbon and mylar moving tail for better agility and light weight (magnetic actuator)



The large ultralight wing and tail provides a significant advantage compared to competitors with foam wings: flight speed is around 1.2m/s, that is one can follow the plane walking through doors, corridors, exhibitions. This is a lot more fun than staying in the corner of a room for doing figures of eight. The Lipoly (15 or 30 mAh) allows for long flights (10 or 20 min). Battery is recharged in one hour on the radio control handle. Battery is not removable; it connects to the the charger in a snap.

Construction is simple and low cost. Flexibility of the wing and tail make them crash resistant. Foam fuselage (EPP 2-3mm) is more sensitive to harsh handling, but it is easy to repair. The tail is a simple flat surface. A tension wire gives it the curved shape and provides rigidity. A magnetic actuator moves the complete tail sideways.

On-off direction control provides adequate manoeuvrability, 2-speed control at least on the throttle allows for a good altitude control and performing touch-and-go.

The wing could be detachable, hold by magnets and plastic pieces.

Radio control can use the Rx2/Tx2 circuits at 27 MHz. Receiver circuit must weight less than 0.5 grams. If on/off control, transmitter is a simple box with 4 buttons and a slot for inserting the battery (or the complete plane) to be charged.

The first proto has shown good flight capabilities and does not need special piloting skills. Smaller version are possible, but they will fly at a higher speed. Several prototype iterations are required to define the optimal fuselage and tail dimension for the best manoeuvrability. The propeller-gearbox-motor has to be optimized for cost and performance.

Receiver and transmitter design will not be supplied by Didel (equivalent designs in many toys), but Didel is ready to interact to show how to reach the target of 0.4-0.5g for the receiver.

Technical difficulties

- EPP thin fuselage
- Wing covering
- Gearbox and light propeller
- Receiver
- Battery charging
- Actuator