**ROBOSOC RC-PLANE**

**Project Abstract**

*Exploring Aerodynamics with DIY RC Plane*

**Project Inspiration:** Our project is driven by a deep-seated curiosity to unravel the complexities of aerodynamics and understand the fundamental principles governing flight. Motivated by a desire to grasp the mechanics behind how airplanes take to the skies, we embarked on the ambitious endeavor of constructing a simple RC plane using accessible materials.

**Choice of RS2212 BLDC Motor:** In selecting the RS2212 BLDC motor with a 1000kv rating, we prioritized a delicate balance between thrust performance and power efficiency. Recognizing the importance of drawing minimal current while still delivering sufficient thrust, this motor emerged as the ideal choice to power our RC plane, aligning seamlessly with our project objectives.

**Selection of FSI26B Receiver and F2I6 Transmitter:** The FSI26B receiver and F2I6 transmitter were meticulously chosen for their reliability, affordability, and compatibility with our project budget. These essential components offer robust communication capabilities and responsive control, ensuring a smooth and enjoyable flying experience for enthusiasts of all levels.

**Role of Servo Motors and 3D Printed Materials:** Servo motors play a crucial role in our project, enabling precise control of flaps to optimize aerodynamic performance. Leveraging the capabilities of our society's 3D printer, we harness the power of customization by designing and fabricating components tailored to our specific needs. This flexibility allows us to fine-tune our RC plane for optimal functionality and performance.

**Overcoming Challenges:** Throughout the construction process, we encountered various challenges, with one notable obstacle revolving around the delicate balance of the center of mass. Achieving and maintaining the exact center of mass was essential to ensure proper lift and stable flight. Through meticulous adjustments and iterative experimentation, we successfully navigated this challenge, ultimately achieving the desired balance and performance.

**Enthusiast Engagement and Future Research:** Our project aims to serve as a catalyst for engaging enthusiasts in the captivating world of aviation and aerodynamics. By sharing our journey, insights, and discoveries, we aspire to ignite a passion for exploration and learning among fellow enthusiasts. Looking ahead, we are committed to continued research and innovation, exploring new avenues and pushing the boundaries of what's possible in RC aviation.

**Conclusion:** With our DIY RC plane project, we embark on a journey of discovery, unraveling the mysteries of flight and aerodynamics one experiment at a time. Through dedication, ingenuity, and collaboration, we strive to inspire and empower enthusiasts to explore the exhilarating realm of remote-controlled aviation. As we chart our course forward, we remain steadfast in our pursuit of innovation, eager to uncover new insights and possibilities in this ever-evolving field.

Team members :

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