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HOVERCRAFT BOT REPORT

1.1 Project Overview

What the Hovercraft Does

The Hovercraft is a simple air-cushion vehicle that moves by generating airflow using high-speed FPV brushless motors. The motors create lift and forward thrust, allowing the hovercraft to glide smoothly over flat surfaces. The system is powered directly by a battery and operated using an ON/OFF switch.

Where It Is Used

The hovercraft is mainly used for educational purposes, engineering projects, robotics demonstrations, and learning the basic principles of air cushion technology and brushless motor operation.

1.2 Working Demonstration

The demonstration includes:

- Powering the hovercraft using a battery
- Lift generation
- Forward movement
- Smooth hovering on a flat surface

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1.3 Components Used

Sl. No	Component	Quantity
1	FPV Brushless Motor	4
2	Li-Po Battery	1
3	ON/OFF Switch	1
4	Propellers	4
5	Hovercraft Body	1
6	Connecting Wires	As Required

Why Each Component is Used

FPV Brushless Motors

- Generate lift and forward thrust.

Li-Po Battery

- Supplies power to the motors.

ON/OFF Switch

- Controls the power supply to the motors.

Propellers

- Produce airflow required for hovering and movement.

Hovercraft Body

- Supports all components while keeping the structure lightweight.

1.4 Mechanical Structure

The hovercraft consists of a lightweight body with two FPV motors mounted on it. One motor provides lift while the other provides forward thrust. The battery is placed at the center to maintain balance, and the switch is mounted in an easily accessible position.

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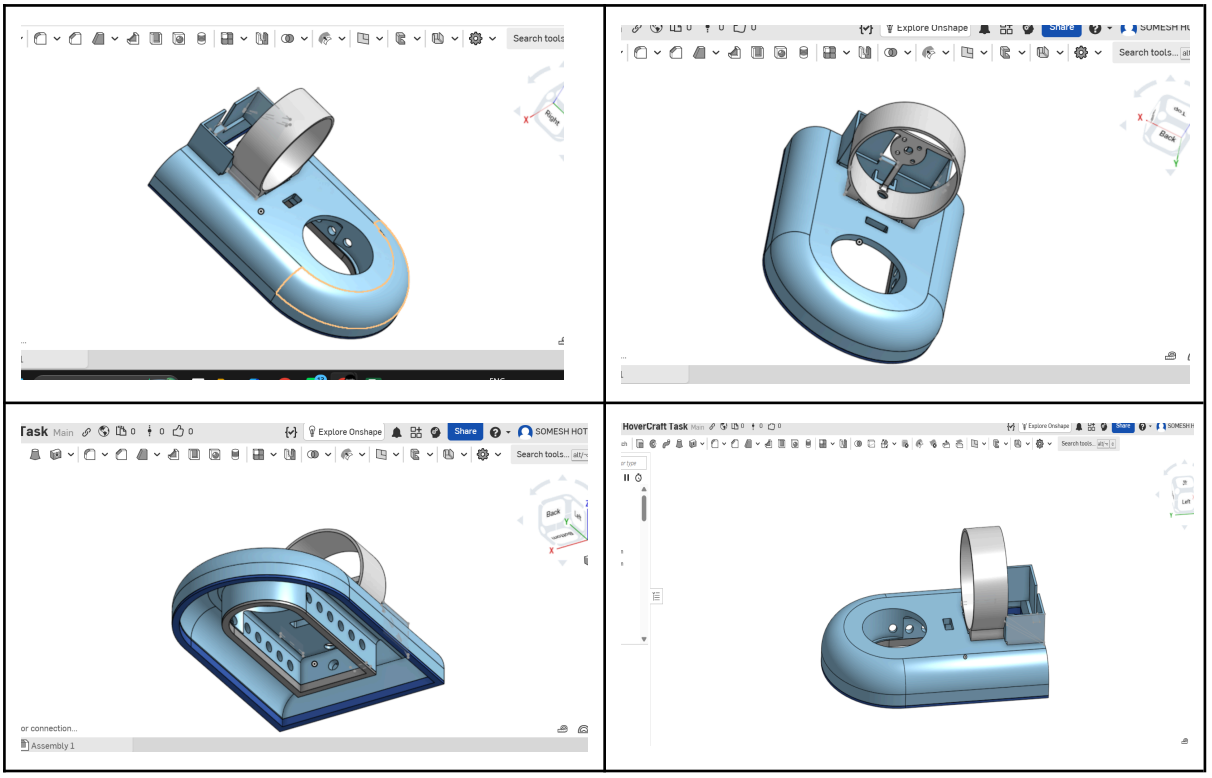
CAD Structure



1.5 Circuit & Electronics

Circuit Diagram

Battery (+)

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ON/OFF Switch

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FPV Motors

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Battery (-)

Circuit Connection

- Battery positive terminal → ON/OFF Switch
- Switch output → FPV Motor positive terminals
- Battery negative terminal → FPV Motor negative terminals

The switch controls the power supplied to the motors, allowing the hovercraft to start and stop easily.

1.6 Working Principle

When the ON/OFF switch is turned ON, the battery supplies power directly to the FPV motors. One motor generates an air cushion beneath the hovercraft, while the other provides forward thrust. The airflow reduces friction between the hovercraft and the surface, allowing smooth movement.

1.7 Safety Precautions

- Keep hands away from rotating propellers.
- Ensure the battery is fully charged before use.
- Turn OFF the switch before making any wiring changes.
- Use the hovercraft only on smooth, flat surfaces.
- Secure all electrical connections properly.

Conclusion

The FPV Hovercraft demonstrates the basic principle of air cushion technology using FPV motors, a battery, and a simple ON/OFF switch. The project provides practical knowledge of aerodynamics, motor operation, and lightweight mechanical design, making it an effective educational project.