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Remote Control Hovercraft

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Abstract: Hovercraft is an important tool used for many purposes. It can float above any kind of space. The Hovercraft is sometimes referred to as the Air Cushion Vehicle because of its ability to navigate through the air-filled cushionnor skirt and cause the board to float above the ground, and run on thrust bengine. forward and fill the pillow with the lifting engine. In this study, focus mainly on analysis and process regarding the design and implementation of the Hovercraft performance model. The various factors that are important in designing a model hovercraft process are listed here. Later, appropriate equipment was selected and Hovercraft performance improved. The main problem is to create insufficient pressure on the air cushion and which leads to a decrease in the accuracy and performance of the model. The main purpose of our project is to produce a water-based vehicle that can also operate in less congested areas.

Keywords - *components, design, function, hovercraft, remote control, working module*

I. INTRODUCTION

A hovercraft is a car that floats above any other land such as snow, sand, grass, and water. -thrust goes forward and fills the pillow as shown in Figure 1.1. In this project, we aimed to build and design our own hovercraft, which can work in many situations as a car in relation to any terrain. The concept of hovercraft is simple, starting with a type of wood that is loaded with luggage and has spaces to help the wood float above any ground. Under the wood, a skirt or pillow happens, and it works to create a change in pressure by holding the air in one place to create the necessary pressure difference between inside and outside the skirt. The mechanical part of our project is an engine and control system that helps control and monitor hovercraft direction. This project is useful and necessary for many situations such as military and security where hovercraft is best for maritime protection and rescue. To work in the trade and hovercraft can play different.

II. AIM & OBJECTIVE

The purpose of this research project includes the Basic Thing of this project is to design a Prototype the hovercraft with a simple design that can perform the required movement tasks. How to design a hovercraft to travel at an average speed of 10 to 15 kilometres per hour. Improve the feature of everything between all operating processes.

III. METHODOLOGY

Before the hovercraft design process began, we decided on the most important principles for building our hovercraft. We consider the following points as a conditional guide:

- Availability of building materials
- Efficiency
- Economics

The performance of a hovercraft depends on the choice of material and the function of each component. Building materials and parts are selected based on their availability and are easy to use in repairs and maintenance when faced with a problem. The main goal that governed the process was a guide to achieving our goal of a successful project. The most important factor is to reduce the friction between the hovercraft structure and the ground. On the other hand, the cost of goods has played a major role in the construction of the

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hovercraft. Next, we determined the type and specificity of the hovercraft design based on the material. The team will have to order overseas, as there is no firm in the Eastern Province that is willing to do these types of parts. On the other hand, lifting the chassis is more important than having high speeds from the driving engine, which is why the average speed is considered optional.

Before the hovercraft design process began, we decided on the most important principles for building our hovercraft. The heat energy will push the body upwards when the body is immersed in water, and the force of force will equal the weight of water the body pushes along the way. When the boat is submerged, part of the vessel gets submerged and pushes the water out of the way.



Fig. 1: Block Diagram of Remote Control

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V. CONCLUSION

Hovercrafts are often the easiest way to think. Yet the process from perspective to manifestation is not as simple as it may seem. There are many problems that need to be addressed in order to find the right hovercraft. Plans and designs must be flawless. One should consider the weight and posture of each component to avoid problems such as instability and inefficiency. This is an amazing machine that greatly reduces friction which helps you to achieve greater speed and stability.

A variety of problems and features should be considered in the design and construction of a hovercraft. The difficulties involved in maintaining stability and operational capabilities limit the application for transportation only or for military purposes. The cost involved in making a hovercraft is also another barrier to the widespread use of this machine

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References

- [1] Kamran Ahmed Khan 1, Salman Ali Khan 2, Mohd. Usman 3, Yuvraj Singh Chib 4, Loveneesh Talwar, "Design and Fabrication of a Remote Controlled Hovercraft", 3 March 2018.
- [2] Divyesh Dave, Vimal Patel, Dhrumil Parikh, Sachin Prajapati, Sumaiya Patel, "Working Model of Remote Controlled Hovercraft", August 2014.
- [3] Chun-ChiehWanga, Ting-En Leeb, "Design of an autonomous remote-control hovercraft with image recognition technology", June 2013.
- [4] Kazuo Tanaka, Member, IEEE, Masaaki Iwasaki, and Hua O. Wang, Member, IEEE, "Switching Control of an R/C Hovercraft: Stabilization and Smooth Switching", Dec 2001