UNIVERSITI TEKNOLOGI MARA

STABILITY AND ECO-FRIENDLY DESIGN OF SWATH HULLS FOR RECREATIONAL USE

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ABSTRACT

The stability and eco-friendly of hull designs are very important in improving marine engineering, especially for recreational boats where passenger comfort and the environment are the main concerns. This study focuses on changing a traditional monohull boat into a SWATH to solve problems of instability and inefficiency in recreational boating.

Recreational boats often have problems like poor stability in rough seas, high fuel use, and too much movement caused by waves, which make passengers uncomfortable and harm the environment. This study aims to solve these problems by designing a SWATH hull that is more stable and better for the environment. The main goals are to create a good SWATH hull design and study its stability to see how it works in different situations.

Preliminary results show a big improvement in the boat stability and efficiency, with less drag and lower fuel use. The eco-friendly design uses sustainable materials and processes that follow environmental standards, helping to lower emissions and reduce the carbon footprint.

This research helps to make recreational boating safer, more stable, and better for the environment. By combining engineering with sustainability, this study is useful for marine tourism and new ideas in the industry, leading to better and more efficient boat designs.

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