

DESIGN OF A V-HULL OPERATIONAL VESSEL FOR THE GOVERNMENT OF ROKAN HILIR REGENCY

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ABSTRACT

Rokan Hilir Regency has extensive river, estuarine, and coastal waters that require an operational vessel to support government activities. However, there is currently no vessel design that adequately meets the operational requirements and the characteristics of these waters. This study aims to design an operational vessel for the Government of Rokan Hilir Regency that is safe, stable, efficient, and suitable for river, estuarine, and coastal environments using the *preliminary design* approach. The research stages include identifying operational requirements, determining the principal dimensions, developing the *lines plan* and *general arrangement*, analyzing ship resistance, hydrostatic characteristics, stability based on the International Maritime Organization (IMO) criteria, and estimating the required propulsion power. The results of this study produced an operational vessel design that satisfies the technical and safety requirements based on hydrostatic, resistance, and stability analyses. Therefore, the proposed design is considered a feasible alternative for a government operational vessel to support mobility, public services, surveillance, and other governmental operations in the waters of Rokan Hilir Regency..

Keywords: government operational vessel, preliminary design, V-hull, stability, Rokan Hilir Regency.