RORO (*Roll On Roll Of*) SHIP DESIGN DUMAI - RUPAT – MALAYSIA (MUAR) ROUTE

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Abstract

A ferry boat is a ship that is used for transportation between two points from one point to another. The problem faced in this crossing is the limited operation of the Roro/Ferry which only serves passenger and goods loads, this causes tourists from Malaysia who want to vacation on the island. Rupat and Dumai (Indonesia) or tourists from Indonesia who want to vacation in Malaysia (Muar) must pay additional costs to rent land vehicles such as gojeks, gocars, etc. The objectives of this research are to obtain passenger load capacity, select the most appropriate ship hull type for the Roro (Roll On Roll Of) Ship Design Planning for the Dumai – Rupat – Malaysia (Muar) route, Determine the main size of the ship, Lines Plan, and General Plan, and Analyzing ship stability. The method used is the Trend Curve approach or usually called a statistical method using Linear Regression from several comparison ships. The results of this research are the load capacity that can be carried as many as 256 passengers and 48 four-wheeled vehicles, where the optimum dimensions obtained in the work on this final project are LPP = 70 m, B = 14 m, H = 5.28 m, T = 2.75 m, using 2 types of main engine type Caterpillar c280-60 7577 bhp. From the results of the condition of 4 loadcases, the stability values obtained are in accordance with IMO standards, International Maritime Organization (IMO) Intact Stability Code (IS Code) 2008. For area 0-30, the maximum value should not exceed 3.15 m.deg. For areas, 0-40, the maximum value should not exceed 5.15 m.deg. For areas 30-40, the maximum value should not exceed 1.71 m.deg. For the maximum value of GZ, the maximum value should not exceed 0.2 meters. For maximum angle, the maximum value is 25 deg. For the Initial GM0 value, the value cannot exceed 0.15 meters.

Key words: Roro (*Roll on Roll Of*) ship, catamaran, stability, resistance