

**REDESIGN OF A 1,200-TON LANDING CRAFT TANK (LCT)
FOR THE TRANSPORTATION OF HEAVY VEHICLES AND
HEAVY EQUIPMENT IN THE REMOTE WATERS OF
TUALANG PERAWANG DISTRICT, SIAK REGENCY**

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ABSTRACT

This study discusses the redesign of a Landing Craft Tank (LCT) vessel that was previously used to transport general vehicles into a vessel specifically intended for transporting heavy vehicles on the Siak River crossing route. The redesign was carried out in response to operational changes following the construction of the Maredan Perawang Bridge, which reduced the dependence of light vehicles on ferry services, while heavy vehicles still require a crossing facility due to the bridge's limited load-bearing capacity. This study aims to develop a vessel design with an increased carrying capacity of 1,200 tons. The design process uses a regression method based on comparative vessel data to determine the principal dimensions of the vessel. The resulting design has a length of 86 m, a Breadth of 24.50 m, a depth of 7.50 m, and a draft of 3.50 m, with an operational speed of 6 knots. Furthermore, the Lines Plan and General Arrangement are developed, followed by resistance analysis using Maxsurf Resistance and stability analysis using Maxsurf Stability under several loading conditions. The analysis results are used to evaluate the hydrostatic characteristics, required engine power, and the vessel's ability to meet stability criteria under the planned operating conditions. This redesign is expected to produce an LCT design that is suitable for the transportation requirements of heavy vehicles in the Siak River area. Keywords: River Tourism Boat, Subayang River, Ship Design, Stability.

Keywords: LCT Ship Redesign [Landing Craft Tank]