ELECTION ANALYSIS OF THE RO-RO SHIP TYPE CATAMARANS
(CASE STUDY OF FERRY AT BENGKALIS ISLAND)

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ABSTRACT

Bengkalis Island economy need highly depends on transportation. One of it is the ro-ro ferry double-ended monohull type, for the crossing of Bengkalis Island to Riau mainland which has a range of ± 8 km with a speed of 10 knots and takes ± 40 minutes. There are thought to replace or add the number of vessels operating, which one of the option is to build ro-ro ferry catamarans. On the basis of the same displasmen with existing monohull vessel, then there are the evaluation of the ship catamarans model which were developed by Molland et al (1994), Main et al (2009) and Jamaluddin (2012) with varies of the distance between the hull ratio \((S / L) = (0.2, 0.3 \text{ and } 0.4)\). Focus of discussion is in the form of determining the smallest total resistance, the calculation of the extent of the lay-out as seen from space dock, the determination of the speed / powering ships and ship motion performance (seakeeping). Evaluation results show in the catamaran mode as a ro-ro ferry at Bengkalis waters and this type of ship produce a smaller total resistance and the motion performance is excellent when compared with the existing monohull vessel.

Keywords: Barriers, catamarans, monohull performance, powering, seakeeping