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INVESTIGATION OF STRUCTURAL RESPONSE OF THE CATAMARAN LIVESTOCK CARRIER IN INDONESIA WATERWAYS ENVIRONMENT

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Abstract:

The investigation of the structural response of the proposed design of the catamaran livestock have been presented. The main aspects of the structural design evaluation of the catamaran livestock carrier have been made. The catamaran structure is characterized by the twinhull form that offers larger deck areas compare with the monohull structure. The finite element (FE) model has been developed by generating the model of the parallel middle body part of the vessel. Stillwater and wave load condition (sagging and hogging) have been considered for the evaluation to assess the capability of hull structure to withstand the hydrostatic load and the hull girder bending load in the Indonesia waterways environment. The structure strength analysis has been carried out according to the Indonesia Classification Regulation using the finite element approach. The longitudinal stress distribution of the vessel has been analyzed for the still water and wave condition. The maximum stress has been identified. The structural responses of the catamaran livestock carrier indicate that the proposed structure design is reliable to support the livestock transportation activities in the Indonesian waterways.

<u>Keywords:</u>

Catamaran, Livestock Carrier, FE analysis, Structural Response

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