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Title: Techno-Environmental Features of Baby Neo-Panamax Container Ships

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Abstract: This paper describes design considerations for more eco-friendly container ships with a particular emphasis on low fuel consumption, environmental friendliness and operational efficiencies. A parametric study has been carried out on the optimum dimensions for the baby neo-panamax container ships of 4,000 to 6,000 TEU, comparing their efficiencies against existing panamax designs and identifying preferred configurations for various capacities. To quantify the efficiencies of the designs from technical, operational and economic considerations, multi-faceted design criteria were established. A matrix of baby neo-panamax designs was evaluated to determine the preferred sizes and arrangements. The study tackles operational economics with a detailed evaluation of 'required freight rate' for each design. The findings of this study confirm the techno-environmental benefits that can be derived from the baby neo-panamax container ships.

Keywords: Baby neo-panamax container ships, multi-faceted design criteria, required freight rate (RFR), energy efficiency