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Assessing Safety of Ferry Routes by Ship Handling Model through AHP and Fuzzy Approach

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Author(s)

Antoni Arif Priadi, Tri Tjahjono, Abdellatif Benabdelhafid

ABSTRACT

Ferry accidents often occur the result of ship handling difficulty which interfacing human, machine and environment. Therefore, a decision tool model as a comprehensive information system, based on the ship handling difficulty, needs to be developed through the combination of Analytic Hierarchy Process (AHP) and Fuzzy Logic System. The Fuzzy Logic System part consists of ship condition, ship handling facility condition, navigation condition and weather condition. The output of decision tool is the ship handling difficulty level in linguistic form. The simulation of model is conducted at several straits in Indonesia water. The decision tool model could be used as management information system by port authority to monitor the ferry/ship movement in real time regarding the ship handling difficulty. Further, it would be used to take some useful safety operation strategies and safety policies to improve ferry transportation safety at port water and strait water.

KEYWORDS

Ro-Ro Ferry; AHP; Fuzzy; Ship Handling

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