SIMULATION OF FERRY TRANSPORTATION SYSTEM: A CASE STUDY AT KETAPANG-GILIMANUK FERRY NETWORK

Name : Ahmed Assqol Hany
NRP : 4205 100 008
Department : Marine Engineering Department
Advisor : AAB. Dinaryana D.P, ST, MES, Ph.D

Abstract

A port is a place on waterway with facilities for loading and loading ships. Ferry terminal is one type of special ports that basically designed for transporting passenger and cars by means of ferry ro-ro ships. Movable bridge is a common facilities that used for loading and unloading cars. The design of movable bridge as a float-able platform is useful to cover the sea tides condition. Ferry terminals often located at the nearest location between two areas that bounded by water/strait. Ketapang Ferry Terminal is located in Java Island and separated by Bali Stait from Gilimanuk Ferry Terminal which is located in Bali Island. In this final project, the simulation model for Ketapang-Gilimanuk ferry network is carried out. The simulation model was developed in order to design ferry timetable at both terminals due to difference fluctuation of passenger and cars in a normal day. It means that the peak of demand at Gilimanuk ferry terminal appear during early time of day. In order to develop the model, it is assumed that all ferries belong to one company, Indonesia Ferry that means, the assignment of ferries is arranged bythis company. The simulation model by means of discrete event simulation was developed and Arena 5.0, a simulation software is used in order to determine the appropriate timetable give the company opportunity to reduce the cost of transportation by reducing number of ferries to be operated at the low demand time.
Keywords: Ferry Terminals, Discrete Event Simulation, Timetables