



## The Risk Analysis of Vessel Traffic for Shore Structure Revisions

Principal Author: Cemil Yurtören  
Co-Author(s): Tanzer Satir, Okan Duru  
Affiliation: Istanbul Technical University, Kobe University

### Abstract

Revision of berth structures and construction of new ports effect the vessel traffic and manoeuvres extremely in a narrow waterway. The effects of a newbuild port terminal and revisions of terminals on a near local area can be measured quantitatively. Izmit Bay is one of the narrow and intensive waterway of Turkey. A chemical cargo terminal projected to expand berth structure and increase ship handling capacity. In this case, ship manoeuvring on that region may be affected by expanding project.

This paper investigates that how this type of expanding projects cause difficulties to the vessel traffic and safe manoeuvring conditions. Istanbul Technical University Maritime Faculty, Japan Marine Science Full Mission Ship Handling Simulators give an opportunity to analyse vessel traffic risks on a quantitatively way by the Environmental Stress Model of Inoue (2000). Simulation practices are performed with the scenario parameters that including depth, bank effect, berth equipments, meteorological and oceanographical effects et cetera. Current pilots of this waterway applied ship manoeuvres in accordance with their own experience and human factors. Results of practices are introduced to ES Model and risks are calculated.

Main objective of the research is measurement of structural revision effects and determination of the policy on this local region. Undersecretariat of Maritime Affairs, Turkey may orientate the port projects to provide balance of commercial rights and true judgement in a terminal area.