

Abstract

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Structural Safety of Ships -New Concept

Abstract This paper deals with the problem of double oil hull tanker loss due to the reduction of her longitudinal strength following a collision (and not due to lack of buoyancy a stability which is another problem). For this purpose, the theoretical procedure which was developed by Hegazy [2003] to calculate the residual longitudinal strength of a struck ship after collision, is applied to double hull oil tanker to find out a relation between the extent of damage resulting from collision and the strength of the ship after collision. The residual strength of three double hull oil tankers is studied. The modulus of sections of these ships before and after damage were calculated and were compared with the minimum modulus of section required by the common structural rules. A new concept of structural safety for ship's hull is introduced based on the residual strength of ships after collision. In this way, the problem of collision between ships becomes a factor to be considered in the early stage of ships' design