

Abstract

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Structural design of double hull oil tankers for collision

This paper deals with the problem of double hull oil tankers loss due to the reduction of their longitudinal strength following a collision (and not due to lack of buoyancy stability which is another problem). For this purpose the theoretical procedure which was developed by Hegazy 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.