HULL FORM DESIGN OF SINGLE STEPPED HULL USING CFD
A CASE STUDY WITH A 15 METER FAST PATROL BOAT

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ABSTRACT

There is a need in reducing resistance of fast patrol boat for researcher and developer due to the increasing performance and fuel consumption. Various methods have been applied to the hull that has been carried out from the researcher. Stepped hull is the one of the most concepts used by the fast patrol developers. It was found that there are no agencies in Malaysia using this concept. In the preliminary process, an original boat has been drawn using MAXSURF. IGES.file then imported into CATIA and stepped hull concept has been applied to the original boat. Simulation by Computational Fluid Dynamic (CFD) is carried out to make comparison between the resistance of original and stepped hull concept. By this simulation, cost of development has been reduced. Three different positions and four different depths of stepped were implement in order to analyze the optimum location. Graph for optimum resistance reduction have been choose for suitable effect of stepped hull concept. Results are discussed in the effect of resistance using stepped with the different location and depth. The maximum reduction of the resistance is at the step of five inches depth from chine and is located at the midship of the boat.

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