

DESIGN AND ANALYSIS OF PROPELLER BLADE USING CATIA & ANSYS SOFTWARE

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ABSTRACT

Fiber strengthened composites have found wide spread use within naval applications recently. Boats and under drinking water vehicles like torpedoes Submarines etc. Torpedoes which are made for deeper and moderate depths require minimization of structural weight for increasing payload, performance/velocity and operating range for the purpose Aluminium alloy casting can be used for the fabrication of propeller cutting blades. In current years the increased dependence on the light-weight structural aspect with acoustic insulation, has resulted in use of fiber content reinforced multi covering composite propeller. Today's work provides out the structural evaluation of any CFRP (carbon fibre reinforced cheap) propeller cutting tool which proposed to displace the Metal propeller cutting tool. Propeller is put through an exterior hydrostatic pressure on either area of the cutting blades with regards to the operating depth and movement across the propeller also bring about differential hydrodynamic pressure between face and again surfaces of rotor blades. The propeller edge is modeled and designed so that it can with stand the static fill distribution and locating the strains and deflections for both aluminium and carbon fiber content reinforced cheap materials. This work in essence handles the modeling and design research of the propeller cutting tool of your torpedo because of its durability. A propeller is intricate 3D model geometry. This involves top quality modeling CATIA software can be used for making the cutter model. This record includes brief information regarding Fiber Reinforced Plastic material materials and the features of using amalgamated propeller over the traditional metallic propeller. Through the use of ANSYS software modal research and static structural evaluation were completed for both light weight aluminum and CFRP

KEYWORDS: Aluminum, Carbon Fiber Reinforced Plastic, CATIA, ANSYS