



Improvement of the Accuracy of a Weapon System using Structural Modifications

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Abstract. Close-in weapon systems are the last line of automated defence carried by warships to protect them against incoming air threats. The high rate of fire required to engage air targets affects the weapon's ability to hit targets accurately and at a sufficient distance. The paper proposes structural modifications in order to improve effectiveness, by using finite elements for the study of the frequency spectrum generated during firing and the rate of fire during engagement in intense operational environments. The geometry of the six-barrel firearm is investigated, in order to determine the factors that contribute to the oscillation of the barrel of the gun from its equilibrium position and to propose suitable specifications that the vibration damping system must carry in order to limit the dispersion of fire in order to improve the accuracy of the weapon.

Keywords: Finite Element Analysis, Frequency Spectrum Dynamic Analysis, Weapon Structural Effectiveness.

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