

Improved Strength of Structure of Military Track Vehicle

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ABSTRACT

The structure of military track vehicle has to withstand loads applied to the body. The loads such as weight of turret and moment from firing rockets cause structure damage if structures strength is not enough. To improve strength of military track vehicle structure, this paper thus presented design and simulated structural behavior. The conditions investigated were rocket firing angle at 0 and 45 degree from the front direction, elevation was at 35 degree. Since loads applied to the structures were compression and moment, buckling was also analyzed. Finite element analysis was used to analyze stress and buckling of structure, analytical method was used against finite element method. The results showed the improved structure can reduced stress occurred.

Keyword: Finite Element Analysis, Military Vehicle Structure, Buckling Analysis

1. Introduction

The Defense Technology Institute (DTI) is initiating a number of research activities in defense industry. One of projects under development is the improvement of military track vehicle to fire heavier rocket. In order to fire heavier rocket, vehicle structure have to modify to receive more load. Stress and buckling from weight and thrust of rocket were investigated. This paper presented structures analysis, FEA was used to analyze stress and buckling, analytical methods were used against FEA. These bellowed pictures show how to improve vehicle to fire heavier rocket. We change launch tube and turret.

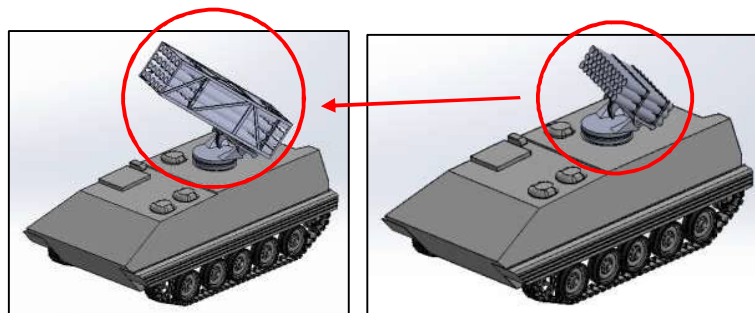


Fig. 1 Military track vehicle model

2. Method

In order to investigate strength and buckling of the structure, commercial software Ansys was