

The Effects of Vehicle Configuration on the Performance of Pulsed Jet Propulsion

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Thesis Defense

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Abstract:

In previous studies, pulsed jet propulsion has demonstrated efficiencies superior to that of steady jet propulsion in the intermediate Reynolds Number range (1-1000) for certain pulsing conditions. This study explored configuration changes to vehicle design as a means of further improving efficiency. Inlet directionality and outlet design were both explored. The efficiency was affected by the configuration in two ways – overall drag on the vehicle and/or the modification of the vortex ring and trailing jet formation of each pulse. Both phenomena were examined in this research.

Bio:

J. Tyler Nichols holds a B.S. and an M.S. in Aerospace Engineering from the University of Texas at Arlington. He is currently employed at Lockheed Martin, Missiles and Fire Control.