F-16 Modelling and Simulation for MECH 6091

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**Introduction**

We chose to model the F-16 as our project.

**Propulsion Model**

We used Piecewise functions for the various parameters of out engine model.

Commanded Power:

Time Delay:

Based on look-up tables, tidl and tmil are found, and thrust is found as a linear combination of the two of them:

**Aerodynamic Model**

From Table #2:

We take the non-dimensional rotations:

**Gravity Forces**

**Atmospheric Model**

For temperature, we use a piecewise function, depending on if we are in the stratosphere or not.

**Equations of Motion**