

The Goal of the “Aerospace Engineering Flight Simulator Lab Project” was to dramatically expand the Middle School Aerospace Engineering Specialty’s Flight Simulator Instructional Program to handle a student population of 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> graders which had rapidly expanded from 80 students in the 2015-2016 school year to 93 students in the 2016-2017 school year to 110 students in the 2017-2018 school year, an increase of 20% in the program’s first year of existence.

Although the Aerospace Engineering Specialty Program provided all 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade students a “hands on” introduction to flight using two existing Redbird TD2 Desktop Flight Simulators, the increase in student population threatened to overwhelm the two existing Redbird TD2 Flight Simulators.

A decision was made to increase the number of Flight Simulators to allow all students in a class block to fly simulations at the same time for an entire instructional block rather than spending limited time cycling through the existing simulators. The \$7500 cost of each TD2 made additional purchases cost prohibitive, so a more cost-effective solution that could be purchased with Grant Funds was selected.

This option would utilize 25 Microsoft Flight Simulator X STEAM Edition software packages, 25 Thrustmaster T.Flight Stick X “Joysticks”, 25 Logitech ClearChat H390 Headsets and 25 repurposed Desktop Computers at a cost for the entire 25 seat Sim Lab of less than one third of one TD2. In addition, maps, charts and plotters could be added to the program to teach time and distance, fuel required and used and other math computations as well.

The Middle School Aerospace Engineering Specialty’s “Aerospace Engineering Flight Simulator Lab Project” is a very cost effective near-term solution to serving the program’s increased target population of 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade students as shown below...

