

MAE 444. Fundamentals of Aerospace Design.
Assignment #3. Three-View Drawing.

There are two major objectives of this exercise:

1. to become familiar with aircraft dimensions, weights and performance capabilities, and
2. to practice using the solid modeling program, SolidWorks.

The assignment consists of the following:

1. Go to the library or the Internet and look up aircraft of various types in *Jane's* and any other resource that may be available.
2. Choose one of these on which to base your 3-view. Hint: Transport-type aircraft are probably the easiest types for this assignment, though you are welcome to try something more difficult. Collect pictures, dimensions, weights, and performance data on this aircraft.
3. Use the chosen aircraft as a guide, and create a 3-view drawing using SolidWorks. The three-view does not have to look *exactly* like the real thing, but it should be recognizable. The information is meant as a guide for making the sizes and shapes realistic.
4. A completed assignment will include the 3-view drawing with a chart giving basic parameters (such as takeoff gross weight, max power or thrust, max fuel, max payload, *etc.*). On a separate page, you should include an isometric view of the drawing.

Grades will be assigned as follows:

To get a C: Correct layout for the 3-view. Basic aircraft sizes and shapes correct, primitives ok. Both parts turned in.

To get a B: Some attempt to use more sophisticated surfacing techniques (such as lofting) to obtain correct shapes for wing, tails, nose and tail cone.

To get an A: Good success at using surfacing techniques including reasonable match of slopes between parts, wing and tail sweep and/or twist.

Difficulty of your chosen guide will be accommodated to some extent. Details such as wing stores, landing-gear pods, *etc.* are not necessary, but will help strengthen your work.