ASEN 2004: Vehicle Design and Performance

Aero Lab Milestone 2 Individual Glider Design Concept

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STUDENT LAB SECTION:012

STUDENT LAB TEAM NUMBER:08

- Tri-View of your final design with dimensions, Sref, Swet, Weight, and AR, stated (see Tempest example from Aero Lab Milestone 1 Data spreadsheet)
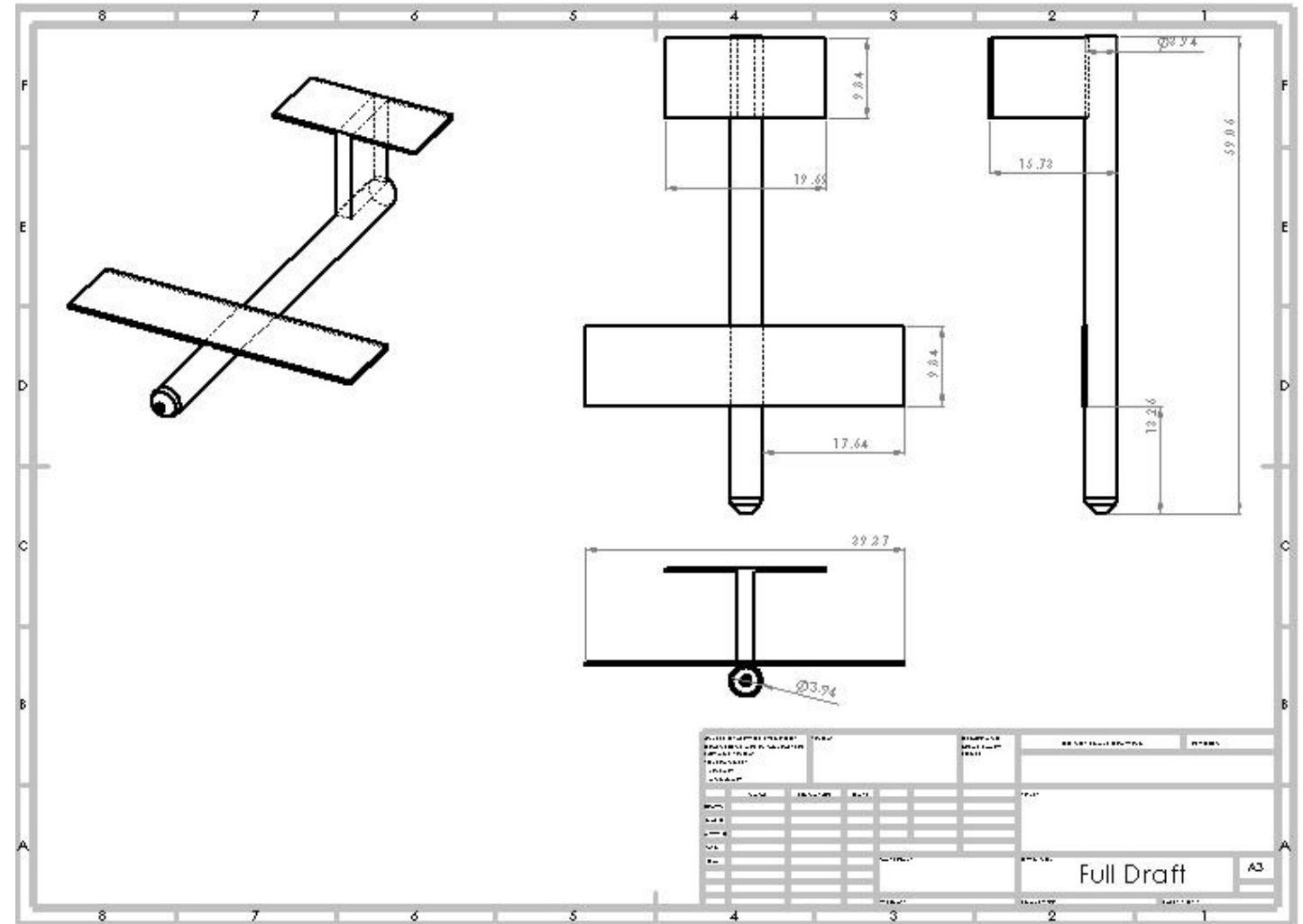
Sref: 0.25 [m^2]
Swet: 1.4569 [m^2]
Weight: 4.2162 [N]
AR: 4

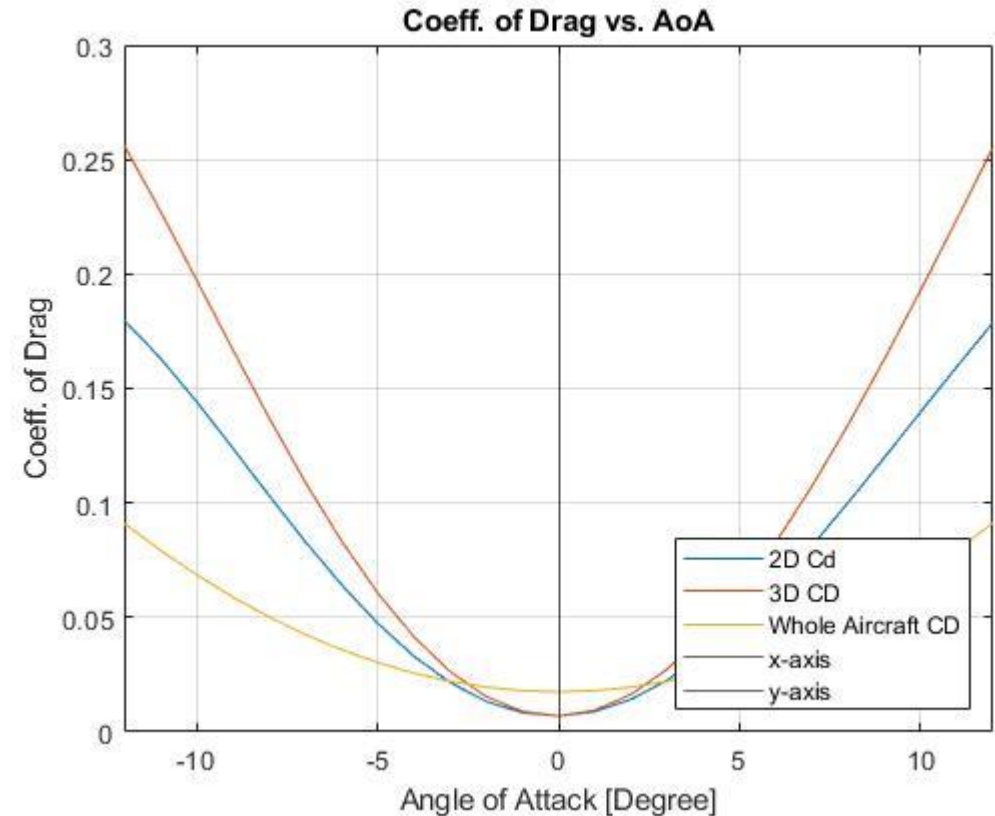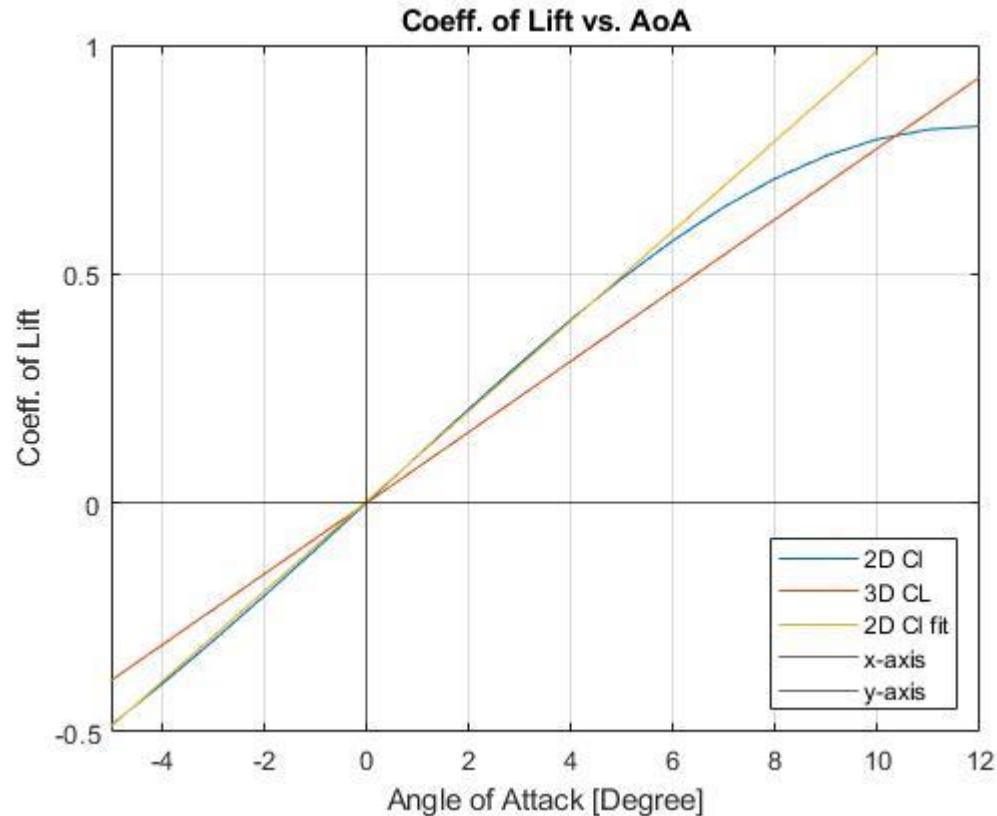Solid works put all my dimensions in inches, not meters. Quite a bummer.

- Estimated Lift Curve and Whole Aircraft Drag Polar Plots. Drag Polar Equation estimate should be explicitly stated on slide.

$$Cd = x^2(5.1152(10)^{-4}) + 0.0175$$

Table 1. Summary of Glider Prototype Requirements

(7 m launch height, 1.5 km Standard Atmosphere)

System Requirements	Threshold	Objective	Min or Max	MY DESIGN
Max Glide Range (meters)	70 m	100 m	Max	90.675 m
Max Glide Range Velocity (meters/second)	12 m/s	7 m/s	Min	8.081 m/s
Max Glide Endurance (seconds)	7 sec	10 sec	Max	11.231 s
Maximum Wingspan (meters)	1.0 m	N/A	Max	1.0 m
Unit Cost (Fake dollars) using the formula: Empty Weight (in grams) * $1 = Cost	No "limit", but will be used as a discriminator between designs.		Min	$426.78