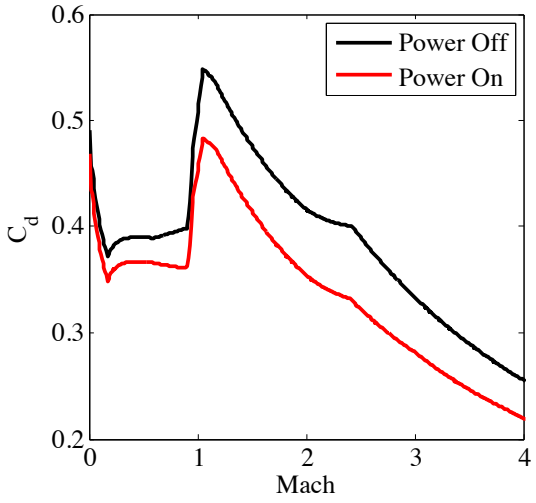
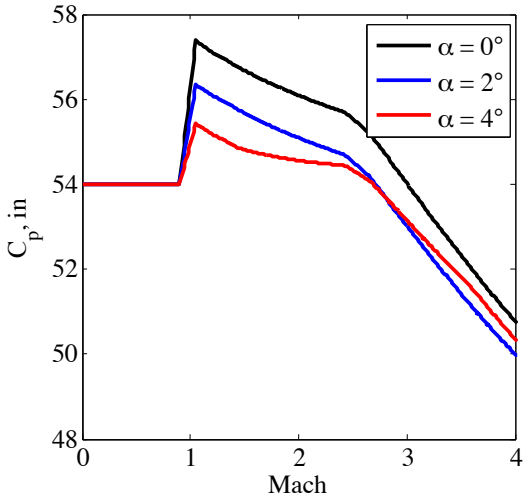
EXPEDITION SERIES

FALCON

3.125" x 52" CCR Carbon Fiber Airframe
0.187" G10 Fins
Silica Phenolic + Fiberglass + Polycarbonate Nose Cone
Wildman Head-End Dual Deploy

Predicted Aerodynamic Performance Curves





Predicted Mass Properties

Component mass: 2.98 lbm

Component center of gravity: 42.584" from nose tip

Principal moments of inertia: (2968.5, 11.5, 2968.5) lbm-in^2

(without recovery system)

Predicted Fin Behavior

Flutter divergence velocity: 6064 ft-s^{-1}

(7000' MSL flight condition, M2245IM motor, Barrowman 3-D lift slope prediction technique)

Flutter frequencies: 348.5 Hz bending, 437.7 Hz torsional

Minimum recommended fillet radius: 0.5 in, with included alignment guides

Recommended adhesive: 3M ScotchWeld DP420

(or equivalent high-peel, high-shear, high-temperature adhesive)

Airframe Mechanical Properties

Layup schedule: [0,0,0,45,-45,90,0,0,0,0]

Density: 0.0573 lbm-in^{-2}

Calculated Young's Moduli: E_x = 1.73 x 10^7 psi, E_y = 6.67 x 10^6 psi

Calculated Shear Modulus: G_{xy} = 3.29 x 10^6 psi