

AIAA CFD Drag Prediction Workshop

June 2001, Anaheim, CA

Test Conditions

For all cases, Reynolds No. = 3×10^6 (Based on $c_{ref} = 141.2$ mm)

- Required Cases

1. Single Point

Mach = 0.75

Lift Coefficient = $.500 \pm .001$

Run on standard grid.

2. Drag Polar

Mach = 0.75

Angle of Attack (Deg) = $-3^\circ, -2^\circ, -1^\circ, 0^\circ, 1^\circ, 2^\circ$

Generation of suitable grid is encouraged.

- Optional Cases

3. Constant C_L Mach Sweep

Mach = .50, .60, .70, .75, .76, .77, .78, .80

Lift Coefficient = $.500 \pm .001$

(Approx $\alpha \approx .86^\circ, .56^\circ, .13^\circ, -.17^\circ, -.22^\circ, -.29^\circ, -.37^\circ, -.43^\circ$)

Note: These values included for guidance only!

Generation of suitable grid is encouraged.

4. Mach/ C_L Matrix (Drag Rise Curve)

Mach = .50, .60, .70, .75, .76, .77, .78, .80

Lift Coefficient = $.400, .500, .600 \pm .001$

Generation of suitable grid is encouraged.

Notes:

- Simulations are to be “free air”; no wind tunnel walls or model support systems are to be included.
- Boundary layer is to be fully turbulent, do not use the transition pattern specified in Agard 303.
- For the optional cases, interpolated forces and moments are acceptable (as is typically done for wind tunnel data reduction).
- Reference Geometry:
 - $S_{ref} = 0.1454 \text{ m}^2$ (full model), $c_{ref} = 141.2$ mm
 - Moment Reference Center: $x = 504.9$ mm, $z = 0$