1st AIAA Transition Modeling and Prediction Workshop
## CRM-NLF Grid Generation Guidelines

Rev 1.2 – 10 February 2020

Please check https://transitionmodeling.larc.nasa.gov/aiaa-cfd-transition-modeling-dg/ periodically for updates

CRM-NLF Model Reference Parameters	
Scale	5.2%
Reference Area, S_{ref}	804.1 in^2
Reference Chord (MAC), c_{ref}	14.342 in
Semi-Span, b_{ref}	60.151 in
Leading-Edge Sweep (outboard)	37.3 deg
Moment Center, X	68.946 in
Moment Center, Y	0.000 in
Moment Center, Z	9.254 in

Butt Line (BL) measurements are provided in inches
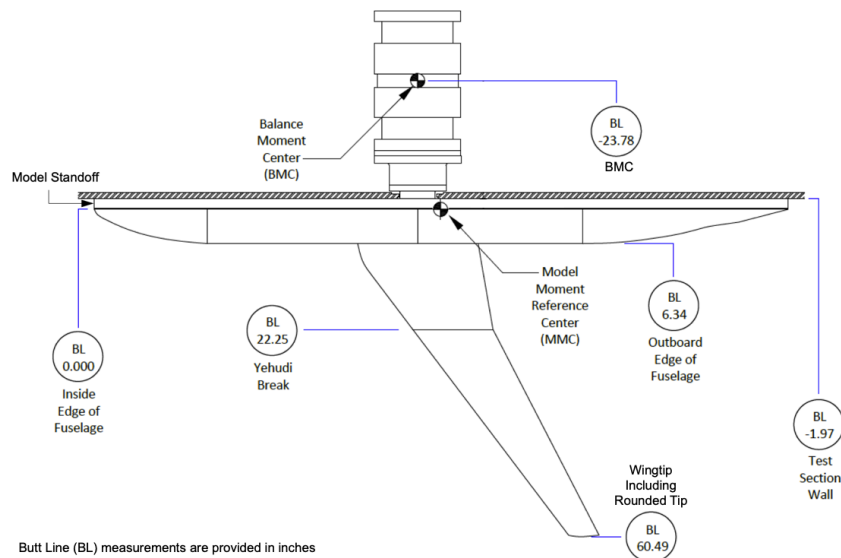
Reference (Medium-Resolution) Grid Guidelines
- Viscous wall spacing: $y^+ \approx 2/3$ ($\Delta y_1 = 1.55 \times 10^{-5}$ inches)
- At least 2 constantly spaced cells at viscous walls ($\Delta y_1 = \Delta y_2$)
- Growth rates: < 1.15X normal to viscous walls
- Wing spanwise spacing: < 0.08% * b_{ref} at root, Yehudi break, and tip
- Wing chordwise spacing: < 0.1% * <u>local</u> chord at LE and TE
- Wing TE base: <u>at least</u> 12 cells
- Spacing near fuselage nose and afterbody < 0.8% * c_{ref}

Growth Rates Between Grids
- Scale grid dimensions consistently in all three computational directions
- Keep grid-spacing ratio between grid levels between 1.15 (8/7) and 1.5 (3/2)

Farfield Boundaries > 100 semi-spans