

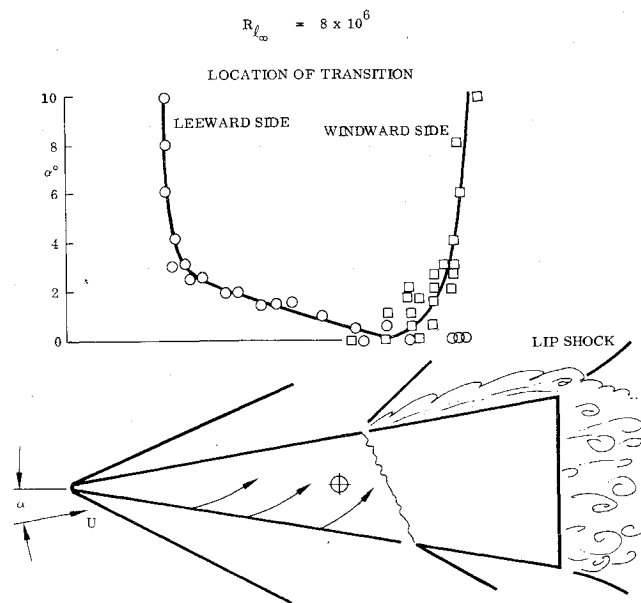


Fig. 3 Effect of angle of attack on boundary-layer transition on a 10° sharp cone at $M_\infty = 6$.

leeward side boundary-layer transition on a sharp 10° cone moves half a body length forward (of the windward and meridian side transition fronts). (See Fig. 3.) On a 5° cone, this large movement would occur already at $\alpha = 1^\circ$, as α/θ_c is the relevant crossflow parameter,⁵ and at a mere $\alpha = 0.5^\circ$ if the conic frustrum has a moderate amount of boundary-layer mass addition (through ablation, for example). On an ogive-cylinder, the typical missile body, the required crossflow angle is likely to be even less. A sudden change of separated flow pattern usually causes highly nonlinear (often discontinuous) changes of the aerodynamic characteristics, with accompanying extremely large effects on elastic and rigid body dynamics.¹⁰⁻¹² Thus, much analytic and experimental work is needed before one can design a finned missile that will work successfully at high supersonic and hypersonic speeds.

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Errata

Hemisphere-Cylinder in Transonic Flow, $M_\infty = 0.7 \approx 1.0$

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ON page 1412, the first line of Eq. (1) should read:

$$\left(1 - \frac{u^2}{a^2}\right) \frac{1}{\kappa} \frac{\partial}{\partial s} \left(\frac{1}{\kappa} \frac{\partial \phi}{\partial s} \right)$$

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Index categories: Subsonic and Transonic Flow; Jets, Wakes, and Viscid-Inviscid Flow Interactions.

Radiation from an Array of Longitudinal Fins of Triangular Profiles

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THE abscissa for Fig. 4 and 5 must be corrected by multiplying the values of N_C by $(1/N_L)^2$. For example if $\epsilon = 1.0$, $N_f = 4$, $N_L = 8$ and $Q^* = 4.0$, the corresponding value of N_C from Fig. 5 is approximately 1.5. This should be changed to $N_C = 1.5 (1/8)^2 = .0234$.

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