

D-10230

-6-

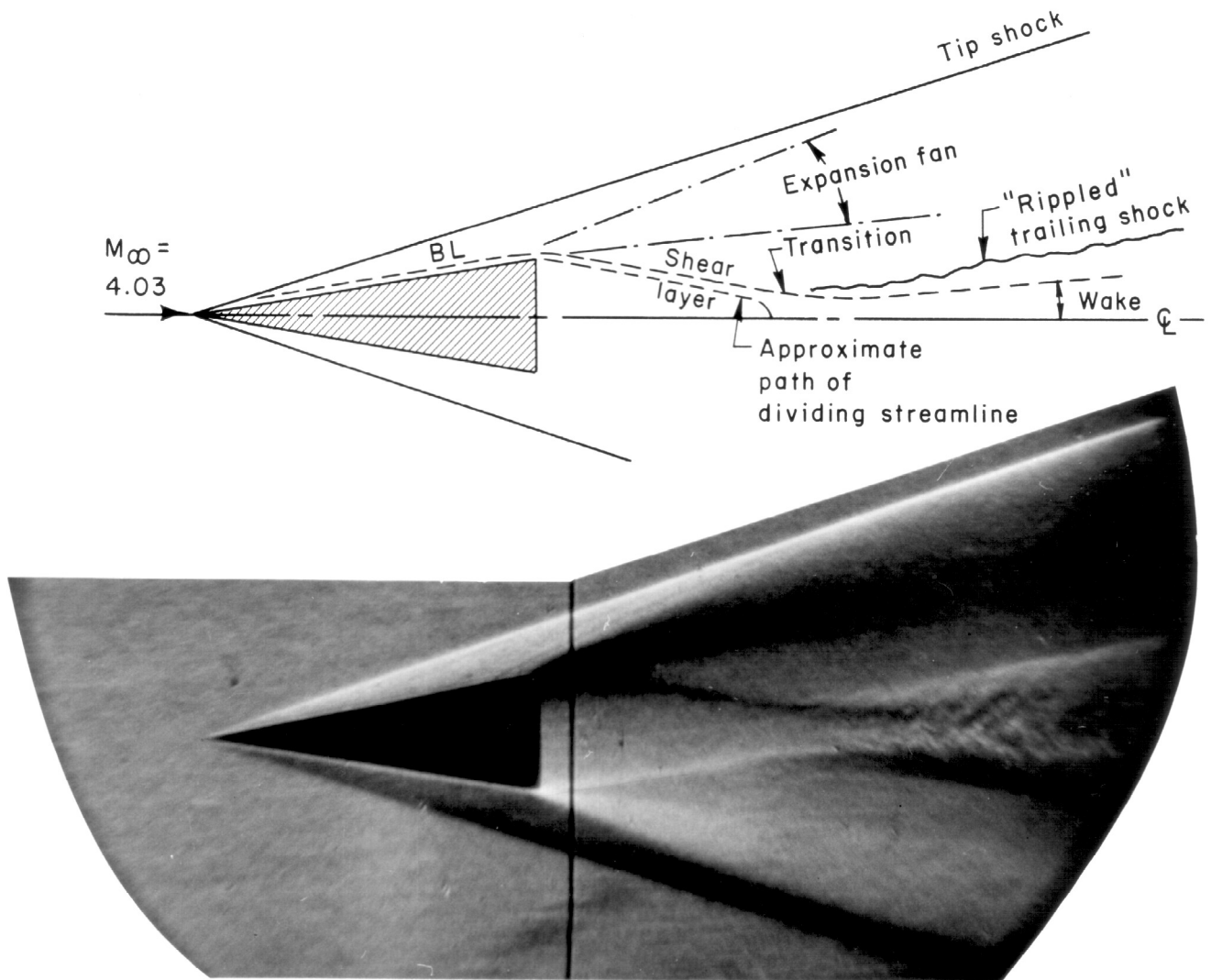


Fig. 5. Free-Flight Spark Schlieren of a 20° Cone at $M_\infty = 4.03$.

Conditions: $M_\infty = 4.03$ $p_\infty = 150$ mm Hg.
 $Re_\infty \cong .48 \times 10^6$ in $^{-1}$ $T_\infty \cong 70^\circ$ F
 $\theta_B = 10^\circ$

Remarks: This photograph is due to Mr. A. C. Charters and is not for general release. No dimension was furnished with this picture, but the base diameter was probably about 1/2". From scaling, the surface Mach number is $M_B = 3.53$, the Mach number outside the free shear layer about 4.85 ± 0.10 . Transition begins as soon as the free shear layer begins to turn back toward the free-stream direction. The initial curvature of the free shear layer is not as pronounced here as in the case of a sphere (see Fig. 4).