

Some terms :

$$(1) \quad \text{Mach Number} = \frac{\text{shock speed}}{\text{speed of sound}} = \frac{V_s}{a}$$

$$(2) \quad \text{Speed of Sound in Ideal Gas } a = \sqrt{\frac{\gamma p}{\rho}}$$

$$(3) \quad \text{Shock strength} = \frac{p_2 - p_1}{p_1}$$

(4) Shock Speed :

$$V_s = a \sqrt{\frac{(\gamma+1)}{2\gamma} \left(\frac{p_2}{p_1} - 1 \right) + 1}$$