Explain why turb is better than lam in Fig. 9.12 (Van Dyke)
- Theoretical flow in Fig. 9.12 like creeping flow
- B.L. attached/longer better (Van Dyke)
- Turb stays attached better than lam (c.f. water flowing uphill)

Explain all Van Dyke stuff in:
- B.L. sep relevant to golf balls
- Creeping flow
- Sep on airfoils and other objects

Lift and drag are different things

\[ \text{LIFT} \]

\[
\text{small wake} \rightarrow \text{small drag}
\]

Pinewood Derby for adults

Micro gas turbine engine
Block of pine - no pine?

Ultra thin pine? (Flat plate drag only)

\[ F_D = C_D \frac{1}{2} \rho v^2 Af \]

1. Plane down to circumscribe cargo
2. Reduce Af
3. Run thru dimpling machine (ensure turbulence)