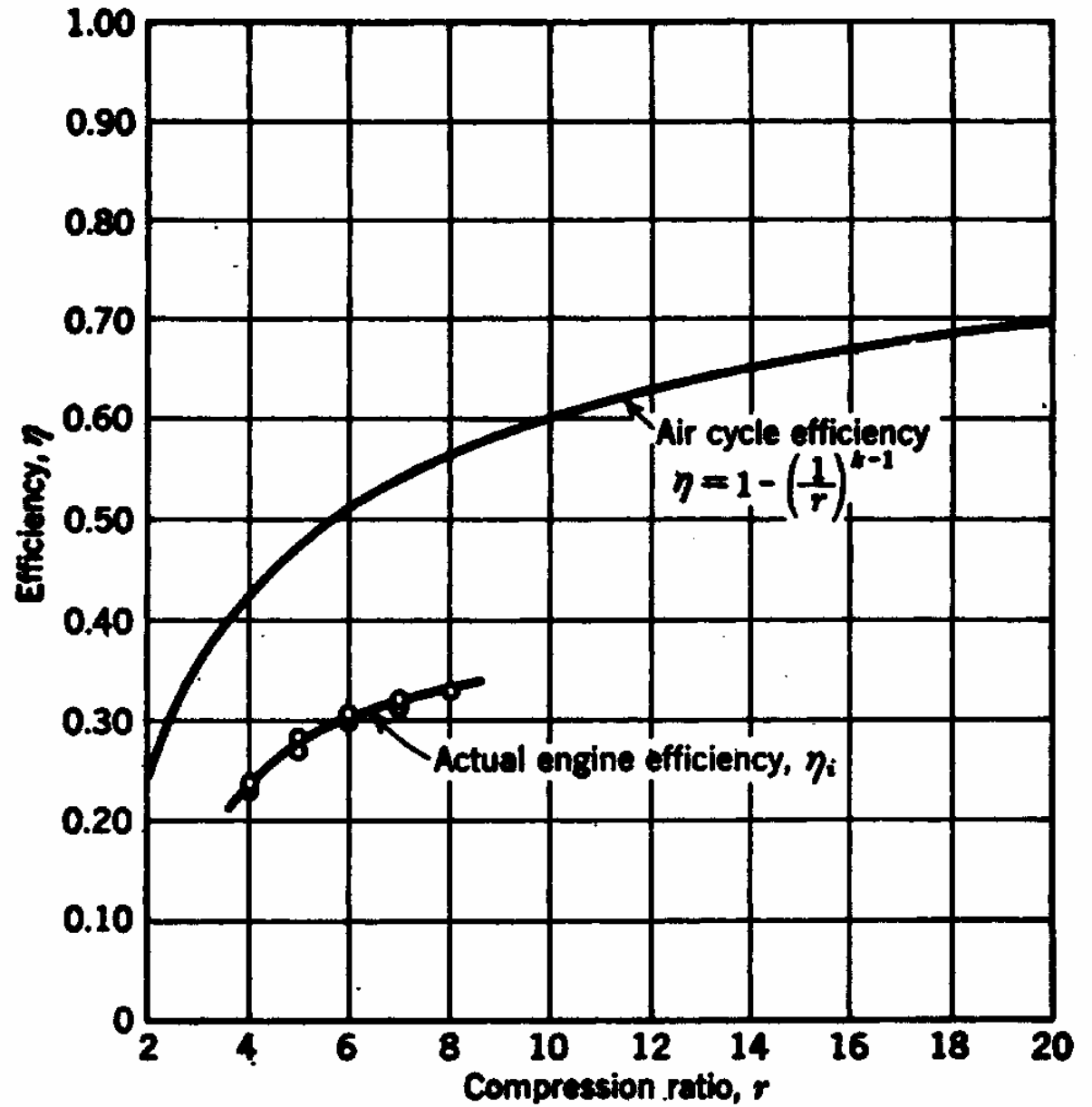
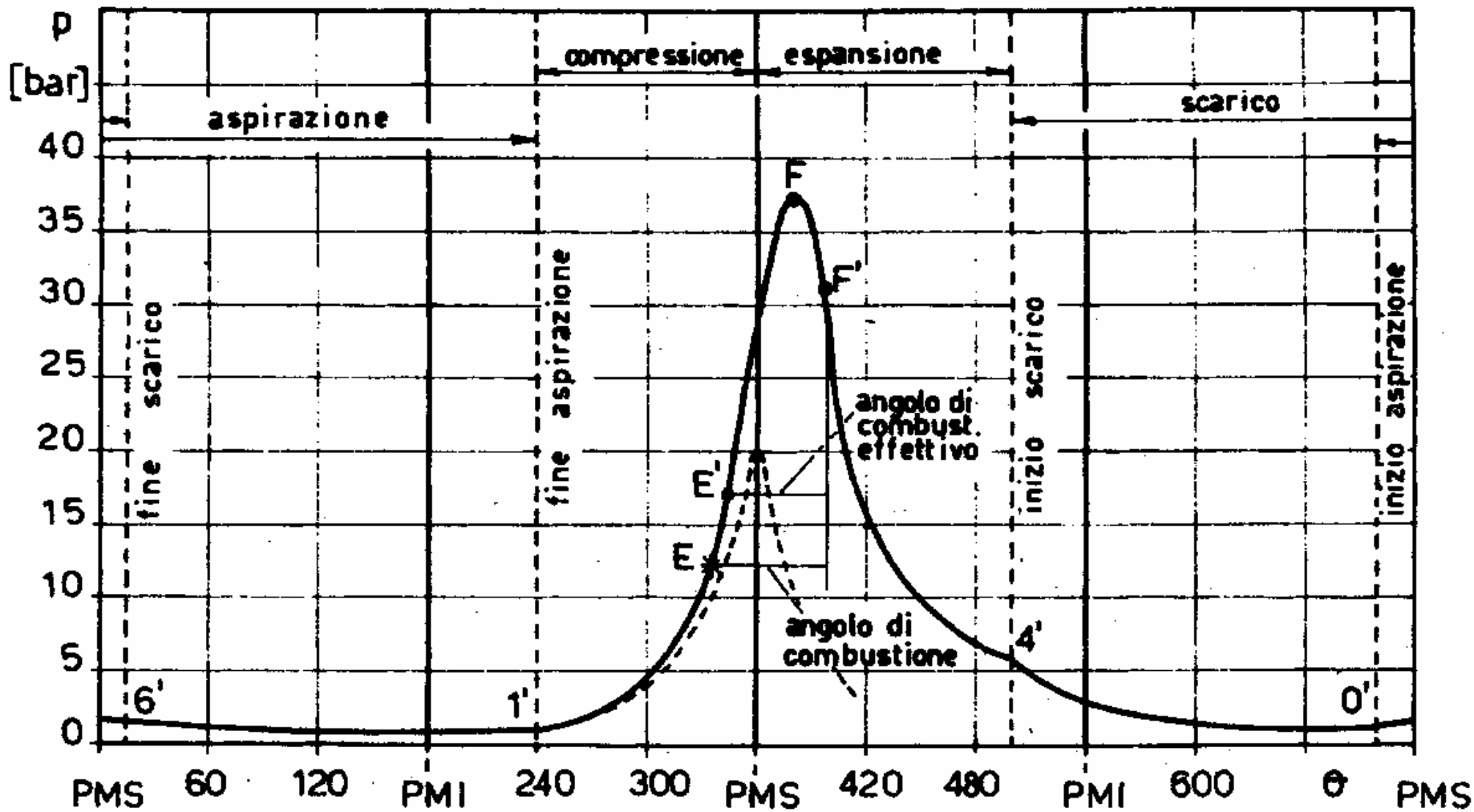


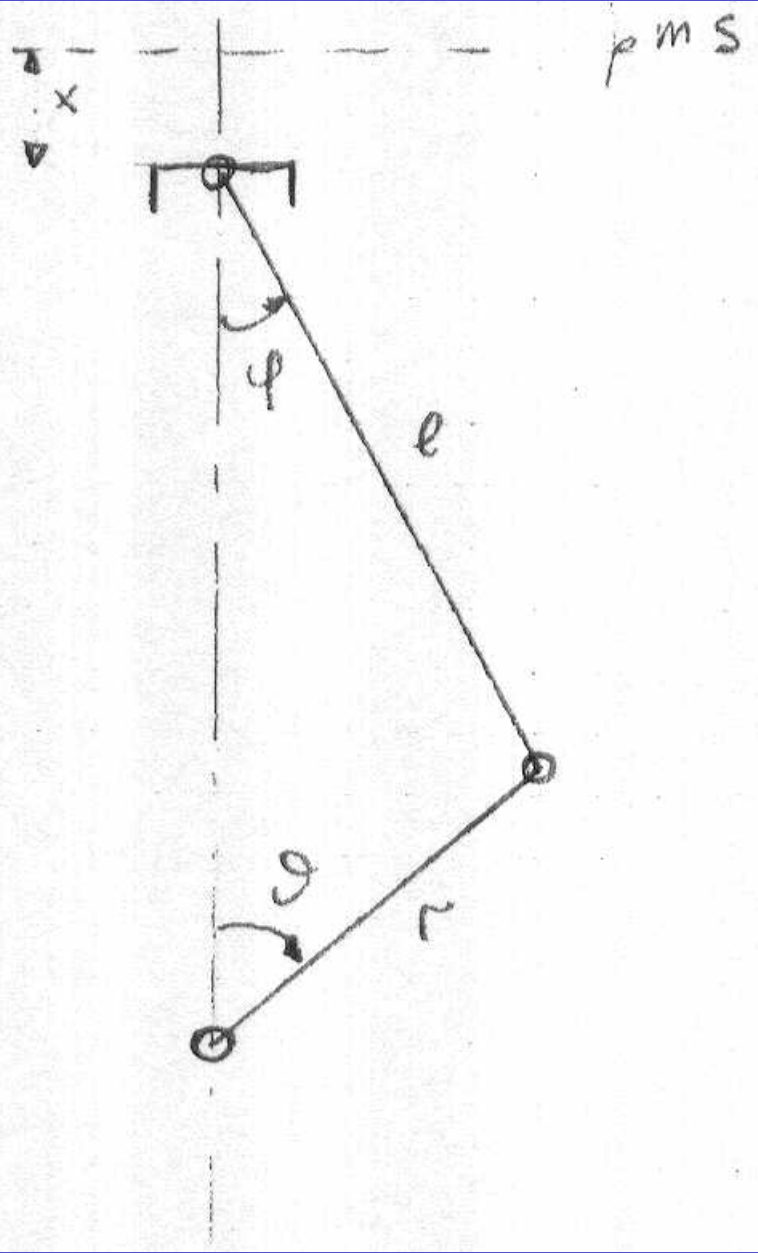
Lezione 16

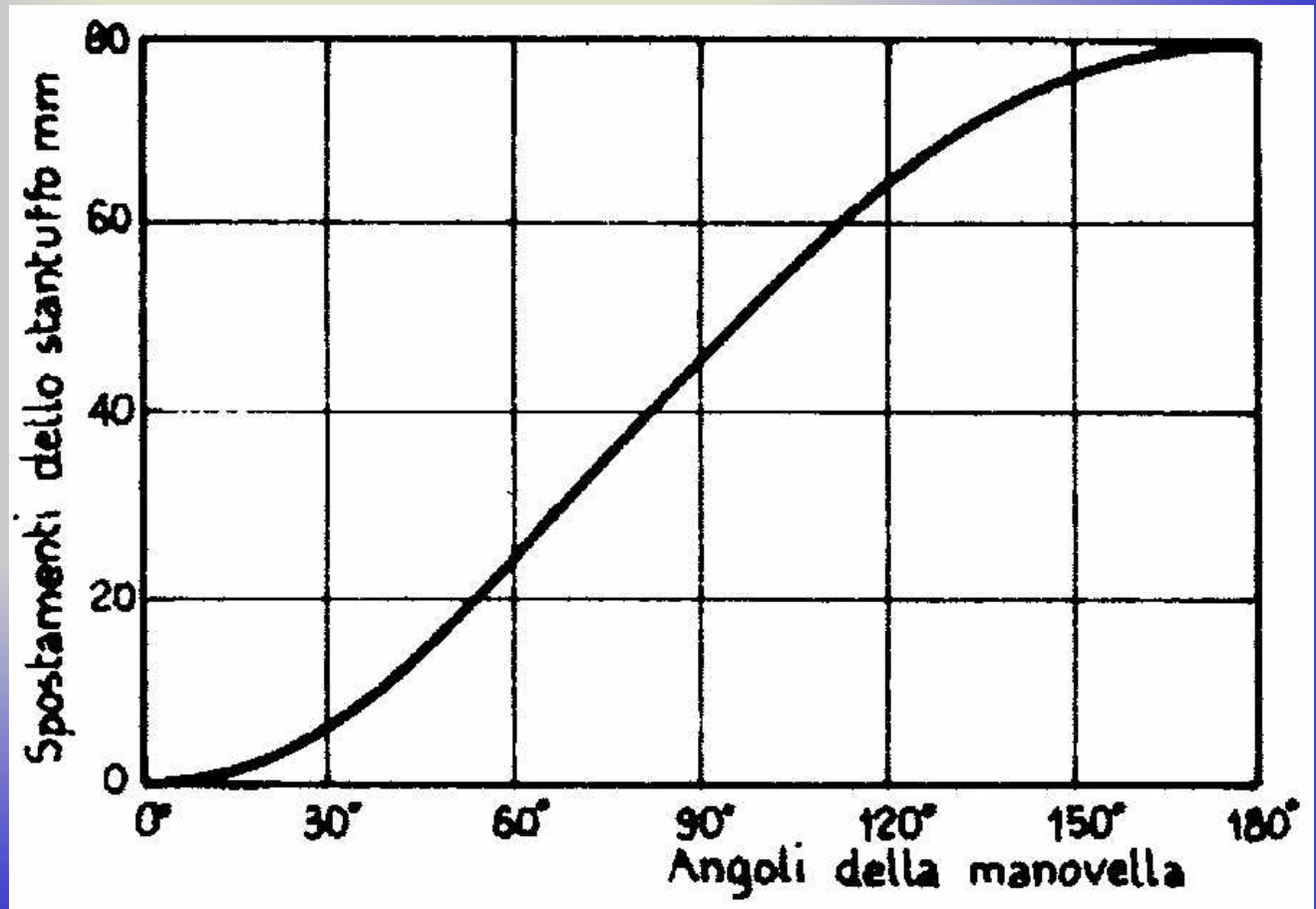
Diagramma indicato
Parametri che influenzano la potenza
Sovralimentazione



PARAMETRO	MOTORI AD ACC. COMANDATA	MOTORI DIESEL
Rapporto di compressione	6 ÷ 11	13 ÷ 23
Pressione di fine compressione	9 ÷ 18 bar	30 ÷ 50 bar
Temperatura di fine compressione	350 ÷ 550°C	700 ÷ 900°C
Pressione massima del ciclo	35 ÷ 50 bar	60 ÷ 90 bar
Temperatura dei gas di scarico a piena ammissione	800 ÷ 1.000°C	600 ÷ 700°C



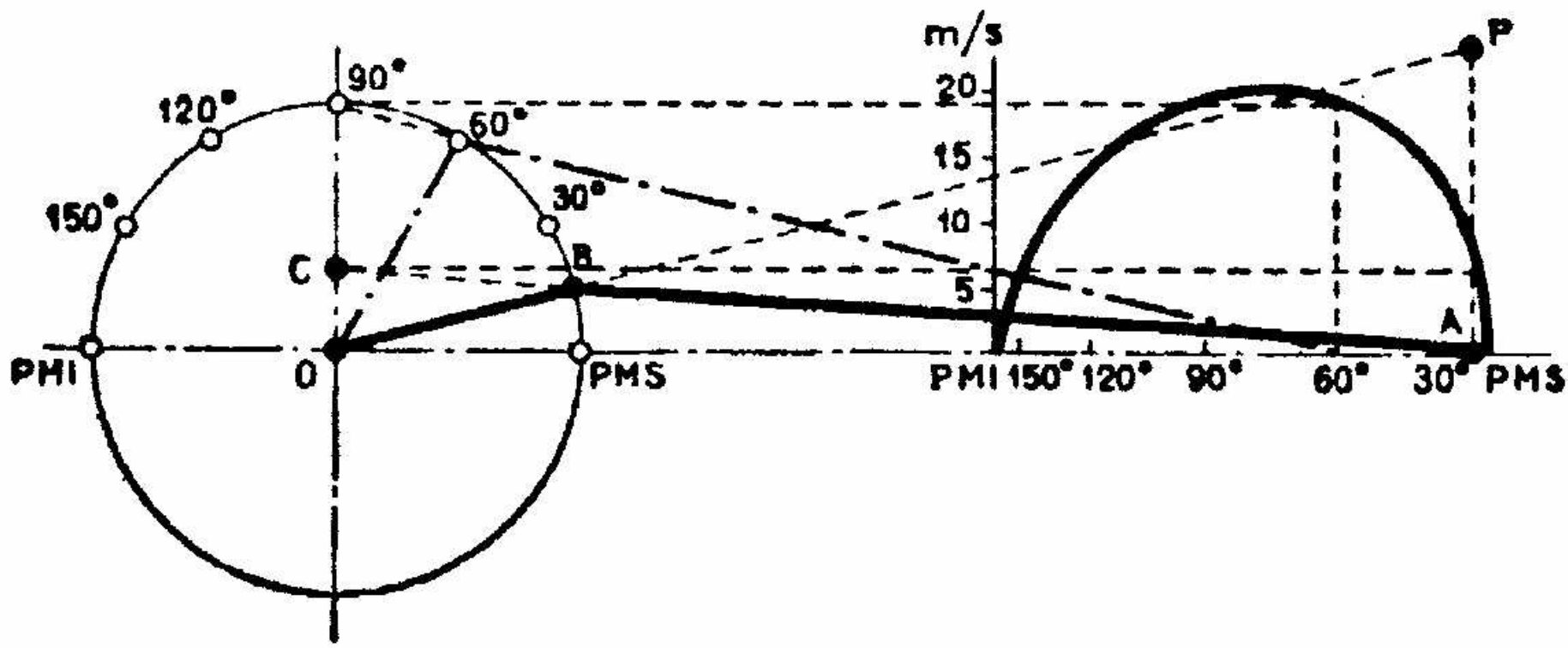


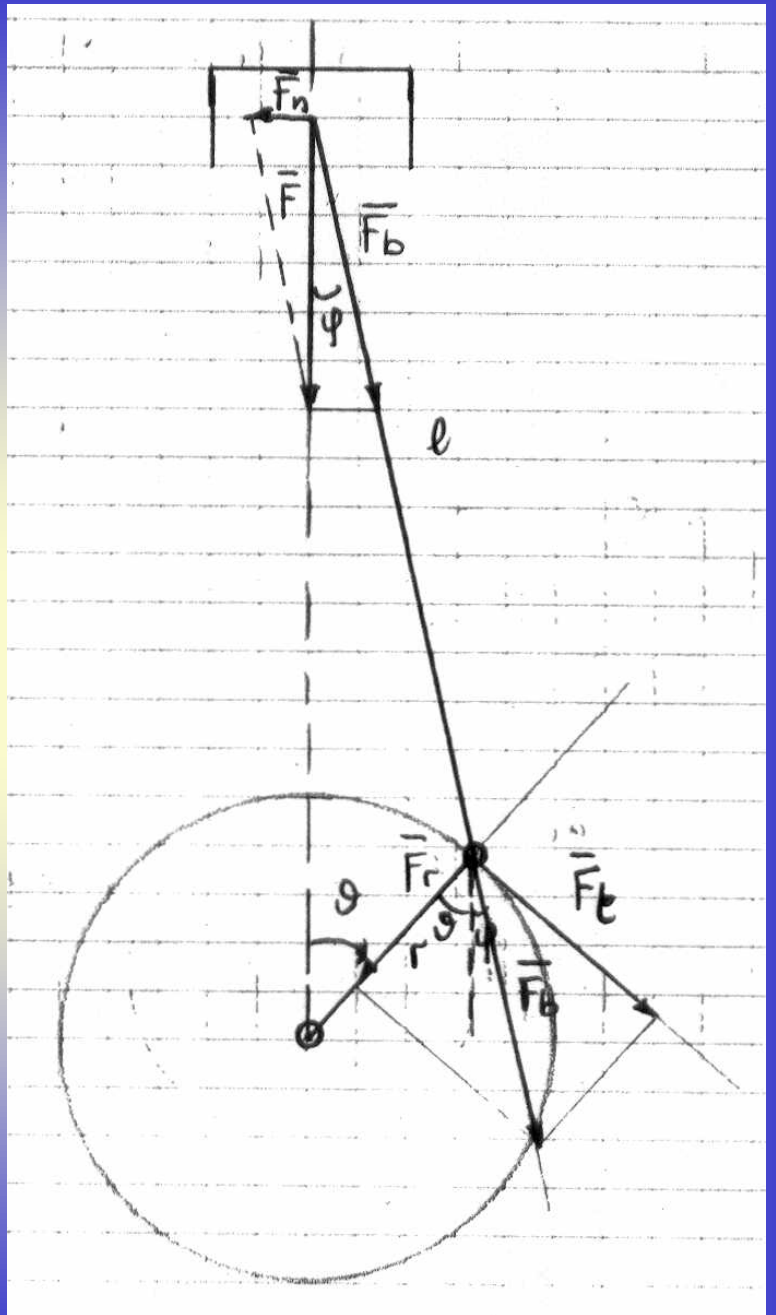


$$u = \frac{dx}{d\vartheta} \frac{d\vartheta}{dt} = \omega \frac{dx}{d\vartheta}$$

$$u = \omega r \left[\sin \vartheta + \mu \frac{\frac{2 \sin \vartheta \cos \vartheta}{\mu^2}}{2 \sqrt{1 - \frac{\sin^2 \vartheta}{\mu^2}}} \right]$$

$$u \approx \omega r \left[\sin \vartheta + \frac{\sin \vartheta \cos \vartheta}{\mu} \right] = \omega r \left(\sin \vartheta + \frac{\sin 2\vartheta}{2\mu} \right)$$





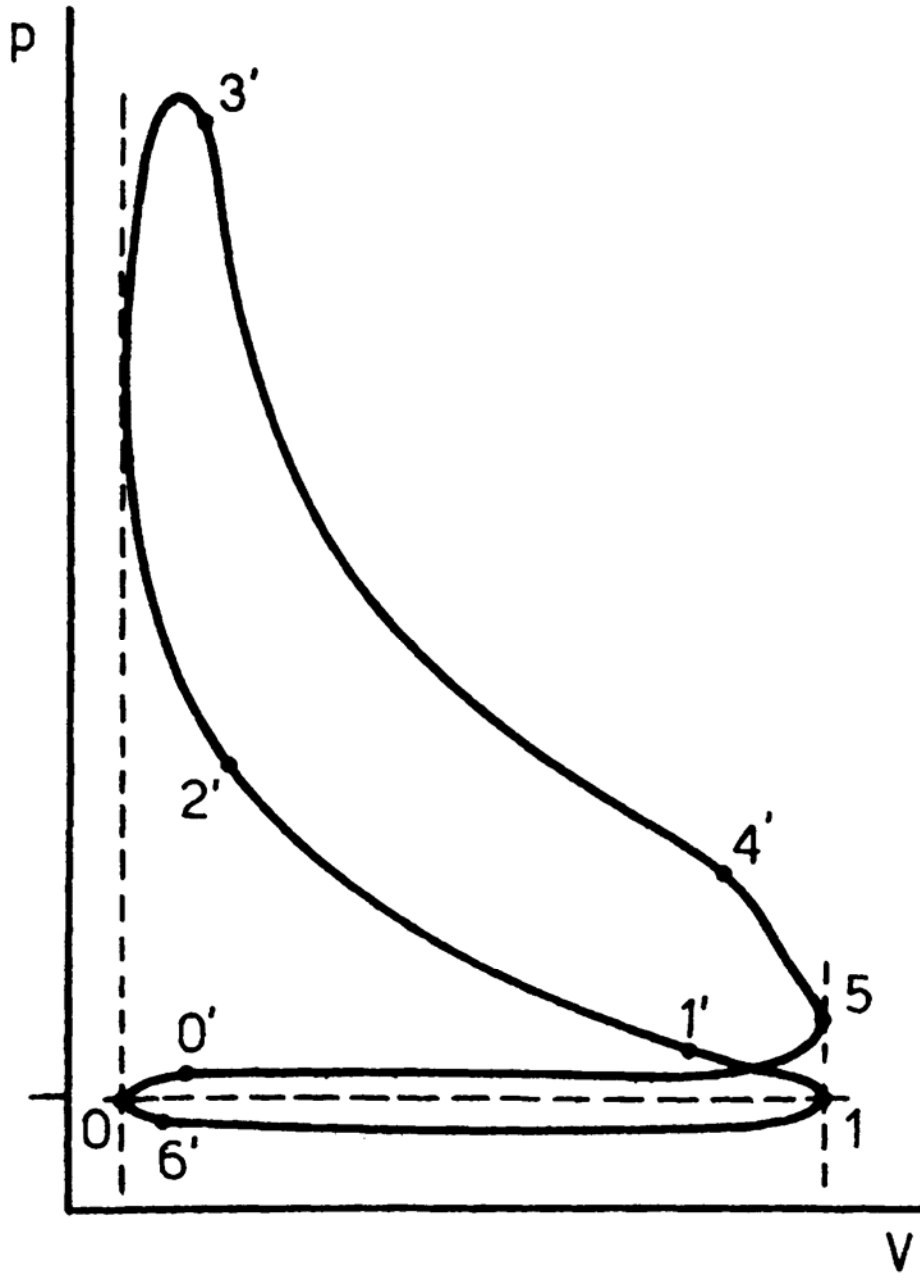
$$\dot{L} = p\Omega u$$

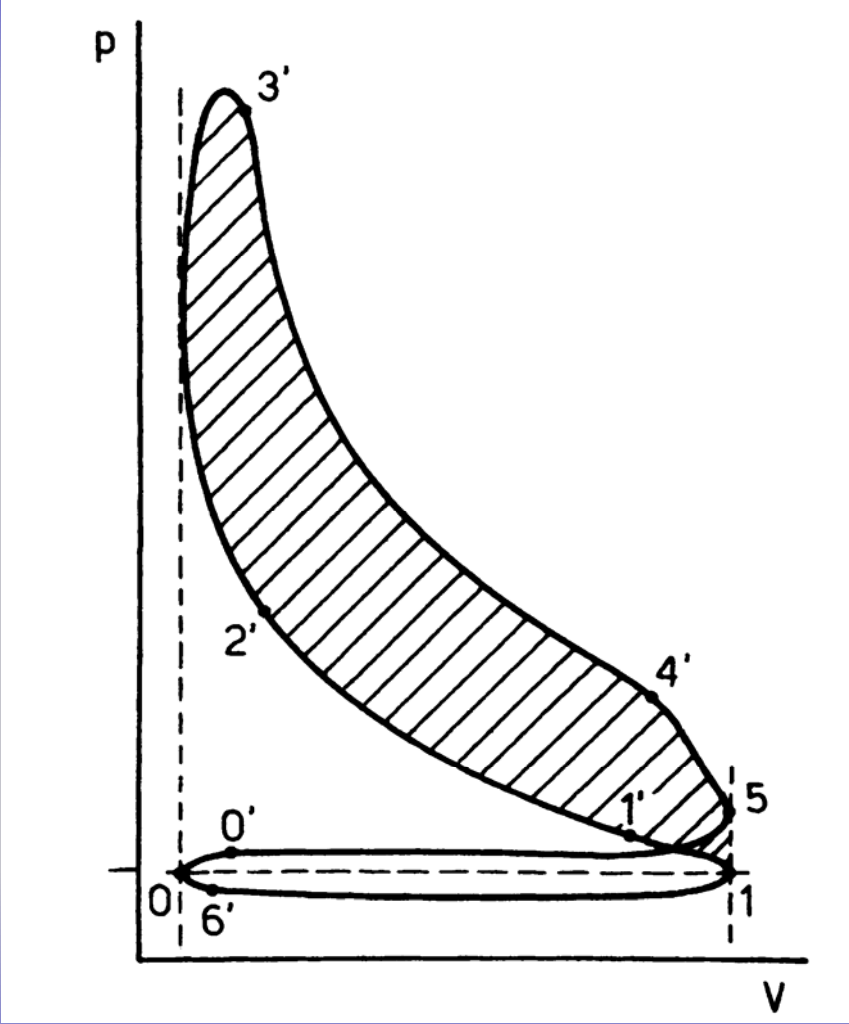
$$dL = p\Omega dx = p\Omega \frac{dx}{d\vartheta} d\vartheta = p\Omega \frac{u}{\omega} d\vartheta$$

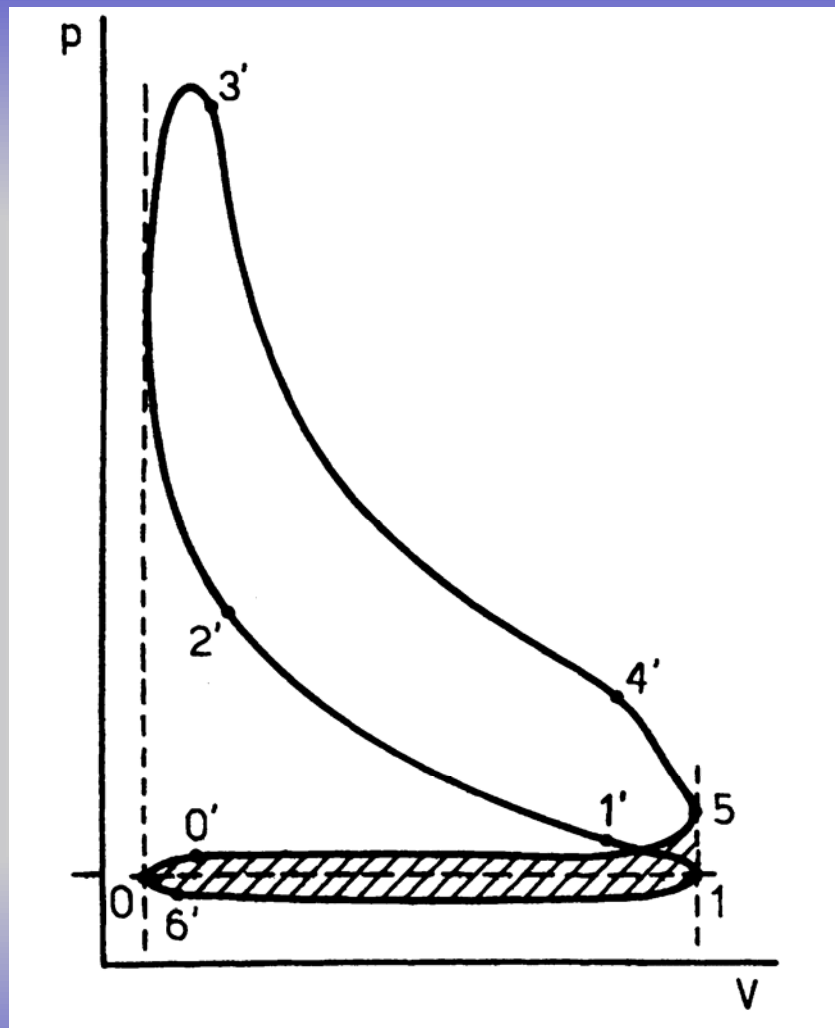
$$dL = p\Omega r \left(\sin\vartheta + \frac{\frac{\sin 2\vartheta}{2\mu}}{\sqrt{1 - \frac{\sin^2\vartheta}{\mu^2}}} \right) d\vartheta$$

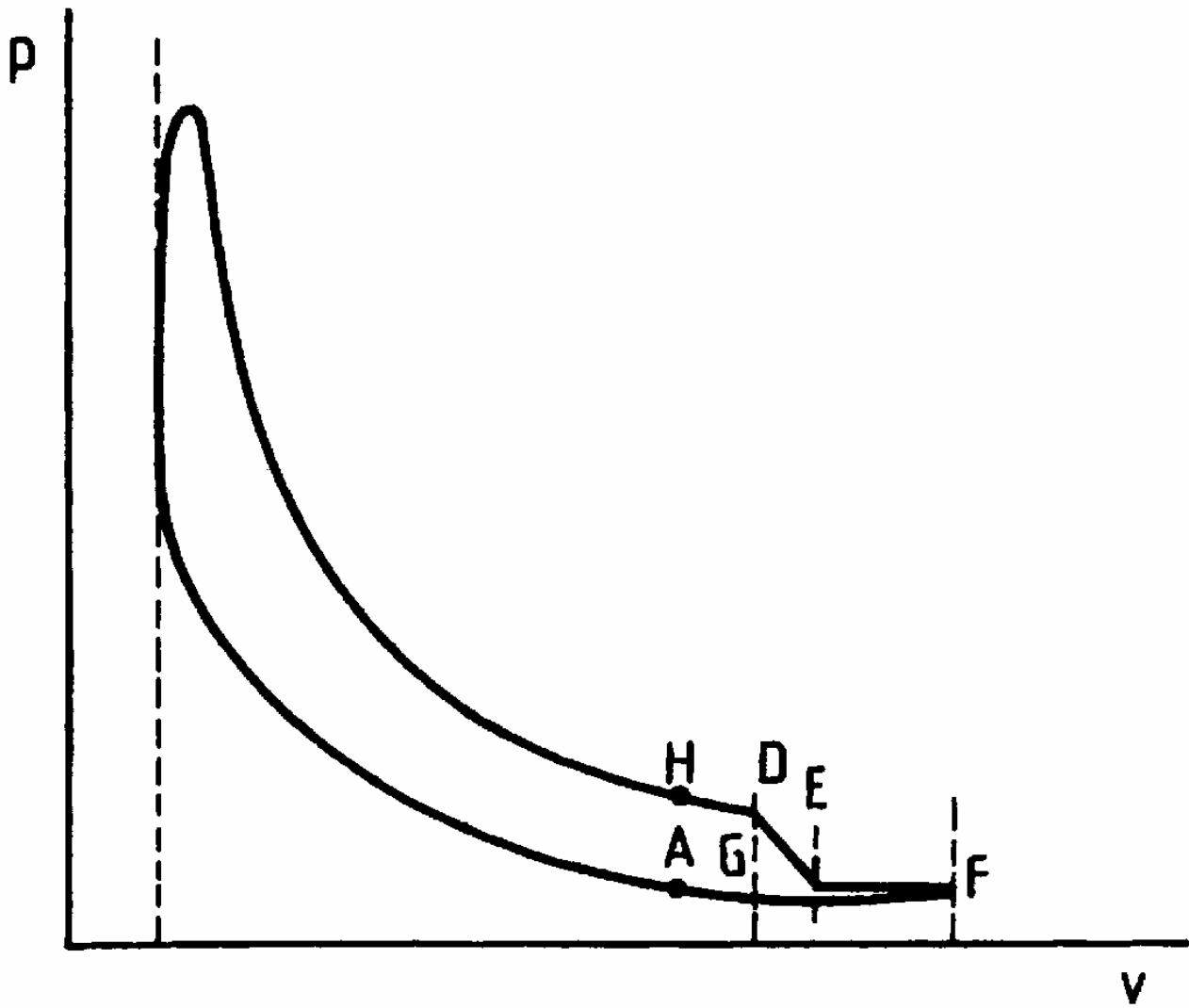
$$L_{cyc} = \int_0^{2\pi\varepsilon} p\Omega r \left(\sin\vartheta + \frac{\frac{\sin 2\vartheta}{2\mu}}{\sqrt{1 - \frac{\sin^2\vartheta}{\mu^2}}} \right) d\vartheta$$

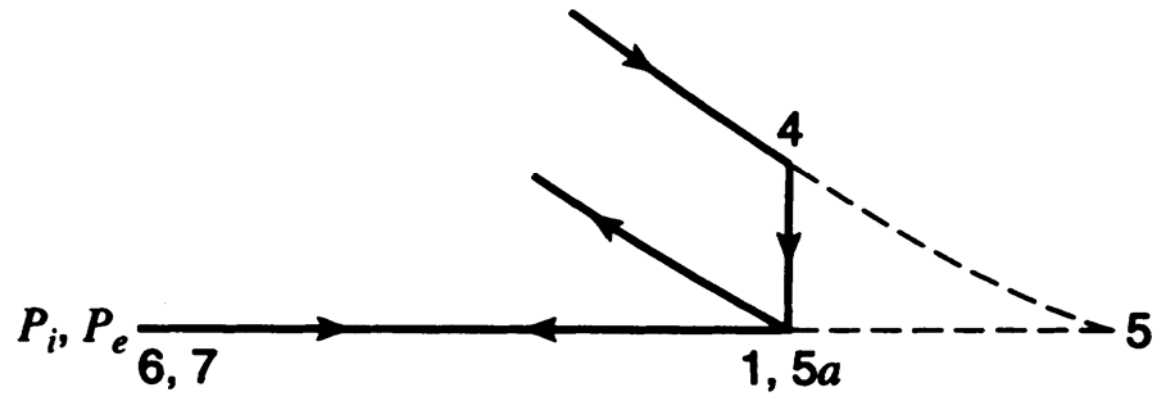
$$L_{cyc} = \frac{V_d}{2} \int_0^{2\pi\varepsilon} p \left(\sin\vartheta + \frac{\frac{\sin 2\vartheta}{2\mu}}{\sqrt{1 - \frac{\sin^2\vartheta}{\mu^2}}} \right) d\vartheta$$



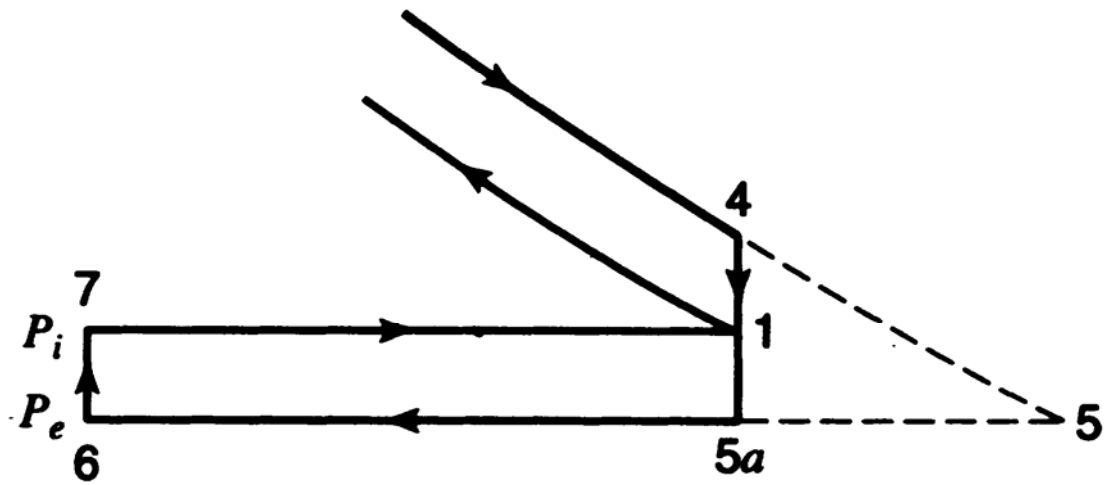








Unthrottled cycle



Supercharged cycle