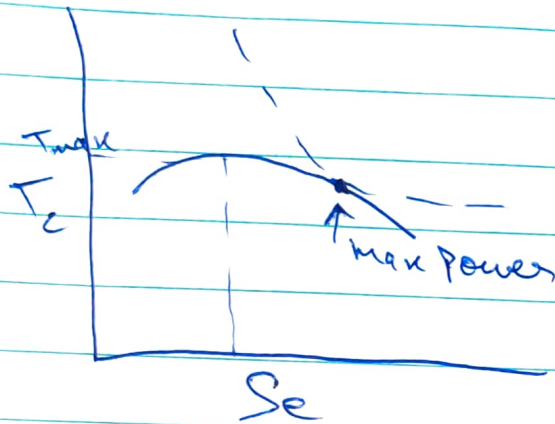
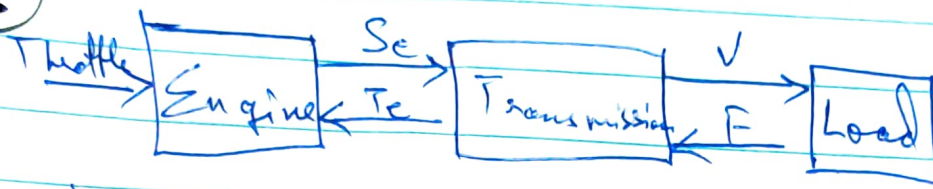


8



$$v = G S_e$$

$$F = Bv + m\dot{v}$$

$$F = \frac{1}{G} T_c$$

$$F = m \times a = \frac{1}{G} T_c = Bv + m\dot{v} = \frac{T_c S_e}{v}$$

$$P = F \times v = T_c S_e. \text{ Therefore } P \propto T_c \& S_e$$

Since drag race has a fixed distance,

$$\text{Work done} = F \times d$$

From comparing the above formulae it seems that maximum acceleration is available near maximum power range.

However, this is impractical. When actual gear ratios are implemented (with gear & other energy losses involved) it becomes apparent that for max acceleration, gear should be shifted when the next gear can provide more torque. That is near the red line (i.e., after max power range). (Can be observed in any race.